



Aalborg Universitet

AALBORG UNIVERSITY
DENMARK

Conceptual Developments & Capacity Building in Environmental Networks

towards Public-Private-Academic Partnerships for Sustainable Development

Lehmann, Martin

Publication date:
2008

Document Version
Publisher's PDF, also known as Version of record

[Link to publication from Aalborg University](#)

Citation for published version (APA):

Lehmann, M. (2008). *Conceptual Developments & Capacity Building in Environmental Networks: towards Public-Private-Academic Partnerships for Sustainable Development*.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal -

Take down policy

If you believe that this document breaches copyright please contact us at vbn@aub.aau.dk providing details, and we will remove access to the work immediately and investigate your claim.

Conceptual Developments & Capacity Building in Environmental Networks

**Towards Public-Private-Academic Partnerships for
Sustainable Development**

Martin Lehmann

the **ike** group

The IKE group, Department of Business Studies, Aalborg University



Conceptual Developments & Capacity Building in Environmental Networks

**Towards Public-Private-Academic
Partnerships for Sustainable Development**

Martin Lehmann

the **ike** group

The IKE group, Department of Business Studies, Aalborg University

2008



Martin Lehmann, 1972 –

*Conceptual Developments and Capacity Building in Environmental Networks –
towards Public-Private-Academic Partnerships for Sustainable Development*

Doctoral Dissertation

© 2008 Martin Lehmann

Design and Layout: Martin Lehmann

Cover: Bangkok Evening Sky, 27 December 2004

Distribution:

Aalborg University

Department of Business Studies,

Fibigerstræde 4,

DK – 9220 Aalborg Ø

Denmark

ISBN: 87-91646-05-7

Printed by UNI.PRINT, Aalborg, 2008.

... to my wife, Dorte, and our children Karoline, Nikolai and Sebastian; sources of much love, joy and laughter...

"We must become the change we want to see in the World" (Mahatma Gandhi)

Summary

Moving from largely command and control measures in the 70s and 80s, through cleaner production and self-regulatory initiatives in the 90s, the emphasis in the new millennium is more on using networks and partnerships as levers for promoting a greening of industry. Predominantly since the 1992 Rio Summit, corporations have been increasingly pursuing these partnerships with public institutions including governments, international organizations and NGOs that aim to contribute to sustainable development activities. Partnerships have become more common as corporations react to mounting pressure from corporate stakeholders, civil society and government on the responsible nature of their business practices. So-called ‘Green Networks’, ‘Cleaner Production Centres’, ‘Waste Minimisation Clubs’ are among the highlighted alternatives to governmental regulation. While being promoted as an option for governments in the South to make up for lack of sufficient environmental legislation and enforcement, the majority of these examples, however, stem from countries in the North.

In terms of public–private partnerships, one of the foremost Danish initiatives is the Green Network in the former county of Vejle. This initiative, initiated by local governments and businesses in the county, currently involves more than 280 partners from both the private and the public sectors (local companies, public bodies and local governments). The network started in 1994 and has grown in size and importance ever since. Fundamentally, it aims at providing new forms of co-operation between public authorities and private companies. The vehicle for this was initially a voluntary environmental statement by companies, who wished to be members. With the passing of time, however, the demands and pressures on both companies and public bodies have increased as has their innovativeness. Hence, the tools and means employed—outside as well as inside the network—have developed accordingly.

Even though they are successful in a Northern context, uncritical transfer of such concepts to contexts in the South along with substantial, external donor funding have in many cases led to disappointing outcomes. It is necessary to discuss and be aware of key factors in the institutional set-up and the importance of institutional carriers for the potential success of Green Networks in the South.

With reference to at that time ongoing initiatives in Thailand, especially the Cleaner Production for Industrial Efficiency (CPIE) network, and the successful case of Green Network in Denmark, this PhD project sets out to examine and assess these initiatives, discuss them based on an institutional and stakeholder

approach (to partnerships) and suggest how the experiences can be understood in their own rights. Inherent in this is the context of development aid.

The point of departure is, however, twofold. From one side, university collaborations and from the other a signification of a corporate awakening towards a broader role of business in society and the trend of corporations embracing partnerships. The latter has led many to question the driving factors that motivate corporations to pursue partnerships. Underlying drivers of corporate organizational behaviour include both legitimacy and stakeholder needs

However, with a constant flow of recipes or standards being the order of the day for modern companies and organisations, their survival also relate to their ability to cope with this flow, adopting relevant recipes from it and incorporating these into their organisation - and dispensing with them when they become outmoded. This ability is exhibited by what Røvik (1998) calls the “multi-standard organisation”, and he identifies five fundamental capacities that define it:

- High **absorption capacity**
- The **capacity to decouple** recipes that do not fit in
- The **ability to translate** new recipes in a quick and easy way
- The **ability to detach** old or worn down institutions, and
- The **ability to preserve and reactivate** older forms of institutional recipes

An evaluation of Green Network reveals that the five capacities outlined in Røvik’s theory are all present. Green Network has exhibited a remarkable ability to keep up with trends in the development of the idea of ecological modernisation and sustainable development. They have been able to keep pace with all the important developments during the last almost fifteen years, absorbing what they find important and discarding aspects that do not fit into their vision and programmes. The resulting manuals, tools and ways of propagating knowledge all reflect the “Green Network way of doing things”, i.e. keep it simple, work together and share knowledge.

The conclusion is that through dialogue, reflexivity and the establishment of an enabling environment, public–private partnerships can become useful vehicles in societies’ move towards sustainability.

In relation to the Thai context, the initial successes of implementing cleaner production through the network approach have been substituted by frustrations of yet another aid-driven project that was unsustainable.

This is the point where “universities as development hubs” enters the stage. Capacity-building in environment and development has been implemented and tested over the last decade through university and university consortia networking. Universities from Africa (Botswana and South Africa), Asia (Malaysia and Thailand), Central America (Costa Rica, El Salvador and Nicaragua) and Europe (Denmark) have collaborated with graduate students and faculty. Initially some programmes emphasised research and others higher education, but eventually a blend of research and higher education appeared to be more productive. Links to external partners in public and private business have been established and proved successful in terms of mutual benefits.

Activities comprise evolution of new study curricula (including a shift of the learning paradigm to problem-based and project-organised learning), exchange of students and faculty, joint research and joint development conferences. The results have been promising in terms of concrete results within each type of activity and together they provide vital steps in capacity-building in tertiary education to the benefit of development and environment.

Strengthening of tertiary education is assumed to be a prerequisite for economic and democratic development in all countries, be they industrialised, in transition or developing. However, particularly in transition and developing countries there is a need for special support, e.g. through international aid programmes to tertiary education, including research and innovation in an interplay with other research institutions, business and government.

Universities should play a central role in such global efforts to strengthen tertiary education. In co-operation with external partners such as business, consultants, NGOs and civil society at large, universities as key agents and providers in new learning, including developing tools such as project-based and problem-oriented learning (PBL) as well as information and communication technology (ICT); as providers of competent and motivated graduates to fill key positions in society; and as indispensable partners in creating the innovative and auto-learning society necessary to curb poverty and facilitate prosperity is emphasised.

Modes of operation are still deficient, but “Public-Private Academic Partnerships” is suggested as a concept to study further and modify to needs. Some of the results and their implications are presented in this thesis and more are documented in the references that are cited. In short, universities, in joint action with business and society at large, are necessary for constructing and maintaining innovative and sustainable societies.

Sammenfatning

Med bevægelsen væk fra 70ernes og 80ernes reguleringsmekanismer præget af tilsyn, kontrol og påbud, over renere teknologi og selv-regulering i 90erne, er det nye årtusinde karakteriseret ved en partnerskabstankegang og brug af netværk som mekanisme til at fremme grønne markeder og en miljøvenlig privatsektor. Fortrinsvist siden Rio Topmødet i 1992 har virksomheder i stadig højere grad efterspurgt og deltaget i partnerskaber med offentlige parter, herunder regeringer, internationale organisationer og NGO'er; partnerskaber, der har til formål at medvirke til aktiviteter til sikring af en bæredygtig udvikling. Partnerskaber er blevet mere fremherskende i takt med at virksomheder reagerer på et stadigt stigende pres fra forskellige interessenter, herunder civilsamfundet, nationale og lokale myndigheder, i forhold til ansvarligheden af deres handlinger. Såkaldte grønne netværk, renere teknologi centre og affaldsminimerings-klubber er nogle af de fremhævede alternative tilgange til traditionel myndighedsregulering. Mens disse alternativer bliver udnævnt som mulige løsninger for myndighederne i det globale Syd til at rette op på manglende miljølovgivning, tilsyn og kontrol, er det rent faktisk sådan, at de fleste eksempler på sådanne partnerskaber stammer fra lande i det globale Nord.

Et af de mest succesrige offentlige-private partnerskaber i Danmark er Green Network beliggende i det tidligere Vejle Amt. I dette initiativ, der blev startet af de lokale myndigheder og erhvervslivet i amtet, er der i dag mere end 280 aktive partnere, dækkende såvel den offentlige som den private sektor, dvs. lokale virksomheder, offentlige institutioner og myndigheder. Netværket startede i 1994 og har siden da vokset i både omfang, indsats og vigtighed. Helt fundamentalt er dets formål at udvikle, afprøve og indføre nye former for samarbejde mellem de offentlige myndigheder og de private virksomheder. Til at starte på var redskabet til dette en frivillig miljøredegørelse (Grønt Regnskab), som især virksomhederne kunne gøre brug af. Som tiden er gået er der dog generelt kommet et både større og bredere dækkende pres på de offentlige institutioner og myndigheder såvel som virksomheder, og der stilles stigende krav til, hvad samfundsmæssigt ansvar dækker over. I takt hermed har både værktøjer og metoder – og deres brug – udviklet sig. Dette gælder i netværket såvel som i samfundet i bredere forstand.

Selvom sådanne typer netværk kan anses for relativt succesfulde i en Nord kontekst, er ukritisk donorfinansieret overførsel af disse koncepter til Syd kontekster ofte mundet ud i i skuffende resultater. Det er nødvendigt at diskutere og være opmærksom på nøgleelementer i det institutionelle landskab og på institutionelle bæreres vigtighed for succes af grønne netværk i Syd.

Med reference til tidligere igangværende initiativer i Thailand, herunder specielt netværket Cleaner Production for Industrial Efficiency, samt den førnævnte succesfulde case Green Network her i Danmark, er det dette ph.d. projekts formål at undersøge og vurdere disse initiativer, diskutere dem i relation til en institutionel og interessent tilgang (til partnerskaber) og foreslå hvorledes de forskellige erfaringer kan forstås og relateres i forhold til et bistandsperspektiv.

Der er dog en tostrengt tilgang til dette. På den ene side universitetssamarbejder, som er den verden, jeg personligt befinder mig i, og på den anden en betoning af, at den private sektor så småt er ved at acceptere en bredere (end snævert økonomisk) funderet rolle i samfundet, herunder også en stigende tendens omkring partnerskaber og virksomhedernes medvirken heri. Dette sidste har ledt mange til at stille sig spørgende overfor, hvilke faktorer, der reelt motiverer virksomheder til at efterspørge og forfølge partnerskaber. Disse underliggende kræfter kan indeholde legitimitets-behov såvel som interessent-pres.

Det er dog sådan, at med det konstante flow af opskrifter, standarder, regler osv., som virksomheder præsenteres for, afhænger deres overlevelse af evnerne til at kunne overskue dette flow, optage og indleje relevante systemer og procedurer, og skille sig af med de unyttige eller de, der er eller bliver overflødige. Denne egenskab kalder Røvik (1998) ”multi-standard organisationen”, og han identificerer den ved fem fundamentale kapaciteter:

- Høj **absorptions kapacitet**
- En **dekoblingskapacitet** af de ’opskrifter’, der ikke passer ind i virksomhedens kernefelt eller med andre ’opskrifter’
- En **kapacitet til at kunne oversætte** nye ’opskrifter’ hurtigt og effektivt
- En **afkoblingskapacitet**, så brugen af ’opskrifter’, der ikke længere er nyttige, kan stoppes, og
- En **lagrings- og reaktiveringskapacitet**, så engang nyttige opskrifter hurtigt kan gendannes og bruges påny.

En undersøgelse af Green Network viser at disse fem kendetegn, som er skitseret i Røvik’s teorier, faktisk alle er tilstede i netværket. Green Network har udvist en forbløffende evne til at følge med i udviklingerne i relation til ideerne om økologisk modernisering og bæredygtig udvikling. De har i relation hertil kunnet følge trit med alle de vigtige udviklinger de seneste 15 år, optaget hvad de har fundet vigtigt og kasseret det, de ikke har fundet passende i forhold til deres egen visioner og programmer. De resulterende værktøjer, manualer og måder hvorpå

viden udbredes er alle en refleksion af den særlige Green Network måde at gøre tingene på, det vil sige gør det ikke sværere end det er, samarbejd og del jeres viden med hinanden.

Konklusionen er, at gennem dialog, refleksivitet og etableringen af en fremmede frem for begrænsende kontekst, kan offentlige private partnerskaber blive et ganske brugbart element i samfundets indsats for en bæredygtig udvikling.

I relation til den thailandske kontekst må det siges, at de umiddelbare succeser med at indføre renere teknologier gennem en netværksbaseret tilgang er blevet afløst af frustrationer om endnu et bistandsdrevet projekt, der viste sig ubæredygtigt og kun korttids-holdbar.

Det er på dette punkt, universiteternes rolle som centrale elementer i udvikling og innovation – 'universities as development hubs' – finder sin anvendelse. Gennem universitetskonsortier og -netværk er kapacitetsopbygning indenfor miljø og udvikling blevet indført og afprøvet gennem de seneste 10 år. Universiteter fra Afrika (Botswana og Sydafrika), Asien, (Malaysia og Thailand), Mellemamerika (Costa Rica, El Salvador og Nicaragua) og Europa (Danmark) har samarbejdet med studerende og forskere. Til at begynde med fokuserede nogle programmer på forskning og andre på uddannelse, men over tid er resultatet en kombination af højere uddannelse og forskning, der synes at være mere effektiv og relevant. Samarbejder med partnere både indenfor det offentlig og det private er blevet etableret og har vist sig succesrigt og til fælles gavn.

Aktiviteterne i disse konsortier har indebåret udvikling af nye studier (herunder i flere tilfælde også et paradigme skifte til problem-orienteret og projekt-baseret læring), lærer- og studenter-udveksling, fælles forskningsprojekter og fælles udviklingskonferencer. Resultaterne har været lovende, ikke mindst i relation til de konkrete typer af aktiviteter, der er foregået, men også samlet set, hvor de i fællesskab bidrager til en overordnet kapacitetsopbygning indenfor højere uddannelse og til forbedrede udviklingsmuligheder og miljøforhold.

En styrkelse af højere uddannelse anses for at være en forudsætning for økonomisk og demokratisk udvikling i alle lande, i- såvel som u-lande. Men, i særdeleshed i udviklingslande er der behov for speciel støtte, for eksempel gennem international bistand til programmer for højere uddannelse, herunder forskning og innovation i samarbejde med andre forskningsinstitutioner såvel som med myndigheder og virksomheder.

Universiteter bør selvsagt spille en central rolle i sådanne globale anstrengelser for at styrke højere uddannelse. I samarbejde med eksterne partnere (eksempelvis private virksomheder, konsulenter, NGO'er, og civilsamfundet generelt), lægges

der her vægt på universiteternes rolle som nøgleaktører og formidlere af ny viden og læring, herunder udviklingsværktøjer som IKT og PBL; som formidlere af kompetente og motiverede kandidater, der kan indtræde i nøglepositioner i samfundet; og som uundværlige partnere i at skabe det innovative og selv-lærende samfund, som synes en nødvendighed for begrænse fattigdom og facilitere økonomisk og social fremgang.

Reelt operationaliserbare modeller er måske stadig mangelfulde, men “Public-Private-Academic Partnerships” foreslås her som et realiserbart løsningsforslag og som et koncept til yderligere undersøgelse og modifikation. Nogle af resultaterne og disses implikationer er præsenteret i denne afhandling, og flere er dokumenteret i referencerne. Ganske kort, universiteter, i tæt samarbejde med de øvrige af samfundets aktører, er helt nødvendige for opbygningen og vedligeholdelsen af innovative og bæredygtige samfund.

Table of Contents

PREFACE	XXI
<u>SUSTAINABLE DEVELOPMENT, ECOLOGICAL MODERNISATION AND NEW ROLES FOR PARTNERSHIPS</u>	<u>1</u>
ECOLOGICAL MODERNISATION	2
FOUR CAPITALS AND THE PRISM OF SUSTAINABLE DEVELOPMENT	6
GOVERNANCE	9
NETWORKS & PUBLIC-PRIVATE PARTNERSHIPS	10
WHY BECOME A PARTNER?	11
RESEARCH FRAMEWORK	12
<u>ON THE DISSERTATION AND RESEARCH PROCESS</u>	<u>15</u>
ON METHODOLOGY	19
ON THE CASES	21
DENMARK – GREEN NETWORK	22
THAILAND – CLEANER PRODUCTION FOR INDUSTRIAL EFFICIENCY	26
ON THE ARTICLES CONTRIBUTING TO THE DISSERTATION	28
<u>ON THE THEORETICAL FRAMEWORK</u>	<u>31</u>
ON INSTITUTIONS & ORGANISATIONS	31
ON STAKEHOLDERS	38
ON NETWORKS AND PARTNERSHIPS	41
PUBLIC-PRIVATE-ACADEMIC PARTNERSHIPS (PPAP)	47
<u>CONCLUSIONS & PERSPECTIVES</u>	<u>53</u>
PRIMARY CONDITIONS FOR THE SUCCESS OF SUSTAINABILITY NETWORKS	53
THE FUNCTIONING OF NETWORKS AS INNOVATIVE GOVERNANCE STRUCTURES FOR SUSTAINABLE DEVELOPMENT	57
NETWORKS CONTRIBUTIONS TO CONCEPTUAL DEVELOPMENTS AND CAPACITY BUILDING	60
PERSPECTIVES FOR DEVELOPMENT AID	64
DEVELOPMENT AID & PUBLIC-PRIVATE-ACADEMIC PARTNERSHIPS FOR SUSTAINABLE DEVELOPMENT	66
<u>REFERENCES</u>	<u>73</u>
<u>ANNEX 1 - ABSTRACTS</u>	<u>87</u>

List of Figures & Tables

Figure 1	<i>The Greening Triangle</i>	4
Figure 2	<i>Problems, solutions, incentives and actors associated with 'environment' mainly and 'sustainability' ultimately (adapted from Thrane & Remmen (unpublished))</i>	6
Figure 3	<i>Prism-model of Sustainable Development. Interlinkages are shown as arrows between the four capitals of SD (adapted from Spangenberg & Bonniot, 1998)</i>	7
Figure 4	<i>Triangle of Corporate Sustainability (adapted from Dyllick & Hockerts, 2002)</i>	9
Figure 5	<i>Analytical Framework for the dissertation</i>	12
Figure 6	<i>Structure of Danish Environmental Assistance from 1994 – 2000</i>	16
Figure 7	<i>The circular process employed during this research</i>	20
Figure 8	<i>The Green Network Region in Denmark</i>	23
Figure 9	<i>The CPIE Region in Thailand (imagery from Google Earth)</i>	27
Figure 10	<i>Institutional creation and diffusion (adapted from Scott, 2001:195)</i>	35
Figure 11	<i>The framework for 'Institutionalisation' as applied in this dissertation</i>	37
Figure 12	<i>Example of Company-Level Network with three distinct stakeholder-spheres of regulation, business, and knowledge (adapted from Søndergaard et al., 1997)</i>	40
Figure 13	<i>The Greening Triangle and collaborative P3s (red triangle).</i>	48
Figure 14	<i>Major activity categories in Green Network and the relation to each other.</i>	62
Figure 15	<i>Suggested framework for institutional creation and diffusion through foreign intervention programmes focusing on private sector development mainly.</i>	65
Figure 16	<i>Public-Private-Academic Partnerships at the centre of an innovative and auto-learning society.</i>	68
Figure 17	<i>Societal potential for sustainable development Six linkages and four potentials.</i>	70
Table 1	<i>The coverage of sustainability in Agenda 21 (UN, 1992)</i>	2
Table 2	<i>Two concepts of ecological modernisation (from Jänicke, 2000; Gibbs, 2000)</i>	3
Table 3	<i>The Green Network Road from "Environment" to "Sustainability" (numbers from Green Network homepage, October 2006)</i>	25
Table 4	<i>Articles and their respective foci and contributions</i>	29
Table 5	<i>Institutional Pillars and Carriers</i>	32
Table 6	<i>Stereotype models of government-business relationships, presented in order of increasing governmental authority (adapted from Sørensen, 1994)</i>	44
Table 7	<i>Essential Features of the Partnership Model</i>	45

List of Papers

This dissertation is based on seven papers. The papers themselves are not included in this volume but appended separately. They will be referred to using the Harvard method. All papers have been published in peer-reviewed, international journals or edited volumes (as book chapters).

- Paper 1 LaFrance, J. & Lehmann, M. (2005), 'Corporate Awakening – why (some) corporations embrace public-private partnerships', *Business Strategy & the Environment* **14** (4): 216-29.
- Paper 2 Hansen, J. Aa., K. Lindegaard & M. Lehmann (2005), 'Universities as Development Hubs', in Robert Fincham, Susse Georg & Eskild H. Nielsen (eds.) *Sustainable Development and the University: New strategies for research, teaching and practice*, Howick, RSA: Brevitas: 92-122.
- Paper 3 Lehmann, M.; Christensen, P & Larsen, J.M. (2005), 'Self-regulation and new institutions: the case of Green Network in Denmark', in Sanjay Sharma & J. Alberto Aragon-Correa (eds.) *Environmental Strategy and Competitive Advantage*, Northampton, MA: Edward Elgar Publishing: 286-308.
- Paper 4 Lehmann, M. (2006), 'Government-Business Relationships Through Partnerships for Sustainable Development: the Green Network in Denmark', *Journal of Environmental Policy & Planning* **8** (3): 235-57.
- Paper 5 Lehmann, M. & S. Jeppesen (2006), 'Public-Private Partnerships: Facilitators of Environmental Improvement?', in Richard Welford, Peter Hills & William Young (eds.) *Partnerships for Sustainable Development: Perspectives from the Asia-Pacific Region*, Hong Kong SAR, China: Hong Kong University Press: 94-112.
- Paper 6 Hansen, J.Aa. & Lehmann, M. (2006), 'Agents of Change – Universities as Development Hubs', *Journal of Cleaner Production* **14** (9-11): 820-29.
- Paper 7 Lehmann, M. & Fryd, O. (2008), 'Urban Quality Development & Management – Capacity Development & Continued Education for the Sustainable City', *International Journal of Sustainability in Higher Education* **9** (1): 21-38.

Abbreviations

AAU	Aalborg University
ADB	Asian Development Bank
AMR	Academy of Management Review
CASA	Center for Alternativ SamfundsAnalyse
CBS	Copenhagen Business School
CP	Cleaner Production
CPIE	Cleaner Production for Industrial Efficiency
CSD	Centre for Sustainable Development
CSR	Corporate Social Responsibility
DANCEA	Danish Cooperation for Environment in the Arctic
DANCED	Danish Cooperation for Environment & Development
DANCEE	Danish Cooperation for Environment in Eastern Europe
DANIDA	Danish International Development Agency
DEA	Danish Environmental Assistance
DJSI	Dow-Jones Sustainability Index
DTU	Technical University of Denmark
DUCED-I&UA	Danish University Consortium for Environment and Development – Industry & Urban Areas
DUCED-SLUSE	Danish University Consortium for Environment and Development – Sustainable Land Use & Natural Resource Management
EMAS	Environmental Management Accreditation Scheme
EMS	Environmental Management Systems
EMSU	Environmental Management for Sustainable Universities
EMT	Ecological Modernisation Theory
ENRECA	Enhancing Research Capacity in Developing Countries
E-O-P	End-of-Pipe
EPA	Environmental Protection Agency
EU	European Union
FTSE	Financial Times Stock Exchange
GNP	Gross National Product

G-P3	Green Public-Private Partnerships
GRI	Global Reporting Initiative
ICT	Information & Communication Technology
IKE	Innovation, Knowledge and Economic Dynamics
IMP	Industrial Marketing & Purchasing
IO	International Organisation
ISO	International Standards Organisation
LCA	Life-Cycle Assessment
LCC	Life-Cycle Costs
LCM	Life-Cycle Management
MEE	Ministry of Environment & Energy
MFA	Ministry of Foreign Affairs
MUCED	Malaysian University Consortium for Environment and Development
NGO	Non-Governmental Organisation
NIS	National Innovation System
OECD	Organisation for Economic Co-operation & Development
OHS	Occupational Health & Safety
OHSAS	Occupational Health and Safety Assessment Series
P3	Public-Private Partnership
PBL	Problem Based Learning
PCD	Pollution Control Department
POEMS	Product-Oriented Environmental Management System
PPAP	Public-Private-Academic Partnerships
PPP	Public-Private Partnership
R&D	Research & Development
SA8000	Social Accountability 8000 (standard)
SACUDE	Southern African Consortium of Universities for Development and Environment
SD	Sustainable Development
TFS	Traineeship and Field-Studies
TUCED	Thai University Consortium for Environment and Development

UICEE	UNESCO International Centre for Engineering Education
UN	United Nations
UNCED	United Nations Conference on Environment & Development
UNDP	United Nations Development Programme
UNDPDSD	United Nations Department for Policy Coordination and Sustainable Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
UQDM	Urban Quality Development & Management
WBCSD	World Business Council for Sustainable Development
WCED	World Commission on Environment & Development
WMC	Waste Minimisation Club
WSSD	World Summit on Sustainable Development
WTO	World Trade Organisation

Preface

It has been a long journey so far; and, contrary to many beliefs, one that started not in 2002 but actually in 1998. That year, as a master student of environmental engineering, I embarked on my first professional experience in a developing country. Together with a good friend and colleague, I looked into the Thai systems of environmental management and environmental regulation, and discussed opportunities for cleaner production. Our little endeavour as so-called TFS-students, TFS standing for Traineeship and Field Studies, was financed partly by a university consortia programme named DUCED-I&UA (Danish University Consortium for Environment and Development – Industry & Urban Areas), which again was financed by DANCED (Danish Cooperation for Environment & Development). DANCED had been established following the UNCED conference of 1992 in Rio de Janeiro in order to be one of the main Danish mechanisms for financing and implementing environmental assistance initiatives for developing countries in South East Asia and Southern Africa. It is also DUCED-I&UA that in part has financed this PhD project; thank you! In the years up to 2002, I worked to a large part with DUCED-I&UA, mainly in terms of administration and project management, and it was in these years that the overall foundation for this PhD project was laid. My interests in the topic of environmental development aid slowly grew, and finally, in 2002, after an unfortunate delay due to change of government in Denmark (and the resulting uncertainty regarding employment at universities in Denmark), I could begin a new, however, major, chapter in a 'book' that hopefully has not yet come to an end.

I began the chapter with a critical look into some of the at that time ongoing environmental assistance activities. While many of the projects and programmes financed by both DANCED and DANIDA (Danish International Development Agency) were seemingly beneficial for both recipient and donor, in my opinion many of the activities could become much more beneficial if broader resource bases in both Denmark and abroad were to be engaged. Discussions in Denmark at the time were revolving around the so-called Hernes Report – Partnerships at the Leading Edge – which came about as a result of extensive analysis and consultation with a wide range of the Danish stakeholders, and laid down a new political foundation for Denmark's development policy along with objectives for the development assistance. I had been part of one team at Aalborg University and one at the Danish Rectors' Conference who both critically discussed and assessed the report and the role of universities in development aid. At the same time, much international debate looked into Public-Private Partnerships, which were supposed

to be one of the main levers for achieving global sustainability. This was what I then chose to study; part of the Danish resource base and activities that were deemed successful in the Danish context in a comparison with comparable activities in Thailand. Choosing Thailand came easy. I had already travelled extensively in Thailand, privately liked the country, had many professional and personal contacts, and at the time it was a major recipient of Danish environmental development aid.

To begin with, however, this study was supposed to be about the textile sectors in the two countries, and especially about the small and medium-sized enterprises that made up the sector. Yet, it never really took off that way, because I stumbled across something that I found much more interesting and that I believed in the longer run could have much larger practical and positive implications, especially for Thailand. The project gradually changed and so did the outcomes. They were not papers about the Thai textile industry, nor were they papers about the textile companies' networks. Not that that would not have been interesting, but my point of departure were not really that anymore – perhaps it had never really been. Looking back today, I think that my point of departure in reality was the university consortia that had collaborated extensively through four years at that time and who, to the best of my knowledge, had built something that in the world of development aid had not really been seen before. The more I studied, both here in Denmark and in Thailand, the more I realised that my whole outset was one of “why are the academic institutions not more often included in development aid activities, AND as part of societal activities in a partnership with society's other actors?”. It baffled me, because it seemed so obvious that this was the way it needed to be. Higher Education & Research is the cornerstone of today's most competitive and successful nations. The top five countries (2006-7) are all very small (last years position in parentheses) – Switzerland (4), Finland (2), Sweden (7), Denmark (3) and Singapore (5) – and all focus extensively on knowledge as the key-factor to stay competitive. Why did most development aid not take this (education & research as cornerstones) into account? It came to a point where I at times had the urge to scream at people discussing Public-Private Partnerships “Why are we talking about public-private partnerships, when we should be talking much more about public-private-academic partnerships?” Needless to say, screaming at people rarely produces any forward moving results! So instead we discussed, debated, worked and collaborated. For some years now, actually, and this dissertation is a small part of the outcomes from that work. I will never be able to claim that this is MY dissertation alone. So many people in so many countries have been part of this work; some knowingly, others perhaps (blissfully) ignorant of the fact that this is one of the outcomes. Regardless, I have finally

come to a point where I can close the book, and say to my colleagues and friends, and to myself and my nearest family that this chapter is now written, and that's the end of that!

Perhaps I should at this point also mention that the dissertation is in fact made up of seven published articles and book chapters and a shorter main section. It is the latter that you are reading now. For some time, I quite fondly referred to this as the 'wrapping' (up), consisting of an overview of the problem field, a short introduction to the cases and the articles/book-chapters, a theoretical discussion and development, and overall conclusions and perspectives of the research.

The dissertation is now completed. The last full-stop has been inserted. And even though I did write it and therefore am overall responsible (although, each co-author is as responsible as I for the main messages in the articles and book-chapters), I can no longer care about any possible interpretations of the work. It will always depend on who the reader is and in what context it is read. I can only hope that it will spur new thoughts, debate and more work in the research field for which I care and deem highly necessary in order to better the world we are currently living in.

Let me thus end this preface with expressing my gratitude for the various kinds of support I have received during my time working on the dissertation.

First of all, of course, a big 'thank you' to my two supervisors, Olav Jull Sørensen from the research group on International Business Economics, and Bjørn Johnson from the research group on Innovation, Knowledge and Economic Dynamics, both Department of Business Studies at Aalborg University (AAU). Your faith in me has meant a lot, and allowing me to take the all but direct path is especially appreciated. We still have some unfinished business, though, and I hope you can find some time for me in your otherwise busy schedules.

Second, I would like to acknowledge the different scholars with whom I have co-authored articles and book chapters. Per Christensen from the Department of Development & Planning (AAU) and Jesper Møller Larsen (presently at Rambøll), who first introduced me to the Green Network in Vejle; Jens Aage Hansen (Dept. of Biotechnology, Chemistry & Environmental Engineering, AAU), with whom I have done a lot of work on development aid and possibly will continue to do so in the future; Klaus Lindegaard (presently at University of Southern Denmark), who through our early collaboration pushed me a little towards the innovation system approach; Søren Jeppesen from Copenhagen Business School (CBS), who I got to know from early DUCED days and who I worked with on both the international aspects of Green Public-Private Partnerships and on other development research

related activities; Julie LaFrance, a former Canadian master student (now at International Finance Corporation), who stood up to the challenge of writing a research paper with me, and through that work provided me with further insights into the workings of international organisations and multi-national corporations; and finally Ole Fryd (previously Thailand and Greenland, but now at Copenhagen University), who I got to know during the last phases of an EU financed continued education project, and who has enthusiastically worked together with me on not only that but also the final paper on the role of universities in certain collaborative development projects. Let me say this: it has been a pleasure working with you all, and I appreciate your active participation in writing this chapter of my life.

Third, the IKE group and the staff at business studies in general; thank you for your support and time. A special mention to Nils Østbjerg and Lars Anderson, our IT-staff, who in both good and not-so-good times often made life easier. Not because they fixed my computer (at times they did), but because they often provided social meaning to an otherwise difficult environment – silly conversations, a bit of good-humoured banter, barbecue on hot summer days, a visit to Zürich; all this has often worked wonders – thanks! Further, Christian R. Østergaard, who throughout my studies at the department was (and still is) a good friend, as well as a great source of knowledge about the often mysterious ways of research. Lest I forget, Dorte Baymler, the secretary without whom one may wonder if there would be an IKE group left. Thank you for your help and assistance, your wit and your general cheerfulness.

Finally from the IKE group, a special mention to Esben Sloth Andersen, who besides always having time for a small comment, perhaps gave me the final push to wrap up the whole thing. It was done in public, and I remember the gasps that could be heard from people around the table – and some of the discussions afterwards. Just another lesson that the words said and how these are ultimately perceived by the receiver is different from person to person. Esben, while some may think you in that particular moment crossed the fine line of common decency, it was for me exactly what was needed at the time – a pad on the back and a big shove in the right direction; Thank You!

Fourth, also a special mention and “thank you for the support” to other colleagues at the Department of Development & Planning (AAU), Eskild Holm Nielsen, Arne Remmen, and Tine Herreborg Jørgensen. I am looking forward to continue our collaboration in the future.

Fifth, I would also like to extend my thanks to colleagues at other universities originally members of DUCED-I&UA and sister consortia in Thailand and South Africa. Ulrik Jørgensen, Erik H. Lauridsen, Michael Søgaard Jørgensen, Jens

Christian Tjell, and Henrik Bregnhøj from Technical University of Denmark (DTU); Susse Georg and Michael W. Hansen from CBS; Rob Fincham from Natal University and Brian Boschoff from Wits University, South Africa; and finally Vira Sachakul, Achara Chandrachai, and their colleagues from Chulalongkorn University in Thailand. Especially for Vira and Achara I am very grateful that you allowed me to stay at your respective departments when doing my field research in Thailand. It meant a lot to me to have ‘access’ to facilities and staff, with whom I could both socialise and discuss various aspects of my research and activities. Mutual support during the days after the December 26 Tsunami in 2004 will not be forgotten; thanks!

And sixth and almost final, I would like to extend my gratitude to those that have been the subject of my research, for their valuable insights into their organisations and activities. In this case, however, no-one named, no-one forgotten, but still a big thank you!

Let me now briefly return to a person I have already mentioned before, Jens Aage Hansen, without whom this research project would probably not even have begun in the first place, and without whom it would most certainly not have been as interesting. Jens, you deserve a very special mention for all the work you have provided me with and made me do during the last – at least – eight years. It has been tremendously interesting and valuable for my research and my professional development, and it has been very good to get to know you privately, outside the university walls. Your integrity and dedication is admirable!

Finally, my dear family, who during my studies has followed along with me around the world; who has suffered in my both physical and mental absence; and who at times may have thought that this would become a never-ending story. It didn’t; this chapter has now ended, and we can all move onwards. But it would not have been written had it not been for your near unconditional support. I am forever grateful!

Sustainable Development, Ecological Modernisation and new roles for partnerships

Sustainable Development is our challenge. The traditional dichotomy of Environment & Economics is no longer the only – or real – issue, and the inclusion of social and institutional dimensions has emerged as very actual and very important. In view of this, a diverse set of stakeholders are involved, and the notion of (good) governance is becoming increasingly relevant in this discussion. With new actors entering the field, redefining responsibilities of ‘old’ actors, such as governments, is a necessity. But who should do it – themselves, the new actors, or in a collaborative effort? And who should define sustainable development?

A still useful point of departure when discussing sustainable development is as always the 1987 Brundtland Report (WCED, 1987). According to that, sustainable development¹ (SD) is the process of developing (land, cities, businesses, communities, etc) that *“meets the needs of the present without compromising the ability of future generations to meet their own needs”* (WCED, 1987:43). A **global** SD strategy may then have the objective of enabling all people throughout the world to satisfy their basic needs and enjoy a better quality of life, without compromising the quality of life of future generations, or in other words: *“... to provide to everybody, everywhere and at any time, the opportunity to lead a dignified life in his or her respective society.”* (Spangenberg, 2005:89).

While there has been widespread work on sustainability-related problems during the past four decades, it was only in 1992, as the text of Agenda 21 was revealed at the UNCED Earth Summit in Rio de Janeiro, that the normative concept of sustainable development found widespread adoption and acceptance among a variety of actors (NGOs, business leaders and politicians, most notably). Implementation of Agenda 21 was meant to involve action at international, national, regional and local levels, and in the original text, sustainability was covered in four overall sections, cf. Table 1.

Several United Nations texts, most recently the 2005 World Summit Outcome Document, refer to the “interdependent and mutually reinforcing pillars” (UN, 2005:12) of sustainable development as economic development, social development, and environmental protection. These three dimensions are widely accepted as covering the aspects of sustainable development, however, the original Agenda 21 text may have implicitly covered a further dimension of ‘Institutions’.

¹ Sustainable Development (SD) refers often to the process and Sustainability to the state. In this volume, however, the two terms will be used interchangeably, thus accommodating for both interpretations.

In fact, it was explicitly introduced in 1995 by the Centre for Sustainable Development [CSD] (UNDP/CSD, 1995), but still most often neglected in the general, earlier discourse of SD – and often also in the scientific literature – which mainly discuss the three pillars mentioned above; the ecological, the economical and the social (Kemp et al., 2005).

Table 1 The coverage of sustainability in Agenda 21 (UN, 1992)

<i>Section</i>	<i>Coverage</i>
I: Social and Economic Dimensions	combating poverty, changing consumption patterns, population and demographic dynamics, promoting health, promoting sustainable settlement patterns and integrating environment and development into decision-making
II: Conservation and Management of Resources for Development	atmospheric protection, combating deforestation, protecting fragile environments, conservation of biological diversity (biodiversity), and control of pollution
III: Strengthening the Role of Major Groups	the roles of children and youth, women, NGOs, local authorities, business and workers
IV: Means of Implementation	science, technology transfer, education, international institutions, and financial mechanisms

It almost goes without saying that sustainable development is a contested concept. For some, the issue is deemed to be closely tied to economic growth and the need to find ways to expand the economy in the short term, however, without spending natural resources for current growth at the cost of long term growth (e.g. Meadowcroft, 1997). For others, the notion of growth itself is problematic (e.g. Daly, 1996; Costanza et al., 1997), as the resources of the Earth are indeed finite. These two extremes may be coined ‘techno-centrism’ and ‘eco-centrism’ (Wild, 2000). A less extreme and more influential position is the concept of ‘ecological modernisation’, which in the developed world may have become the dominant model towards a sustainable society (Huber, 2000; Wild, 2000).

Ecological Modernisation

During the 80’s and early 90’s, ecological modernisation was coined to provide a framework for solutions to the increasing clashes between on the one side economy and on the other ecology (Murphy & Gouldson, 2000). By positioning itself between neo-classical economic theory and the pressure for radical systematic change from environmental and neo-Marxist theorists, Ecological Modernisation Theory (EMT) sought to bridge the divide between extremes by outlining principles that could be adopted into the existing structures of modern society. The basic argument was that central institutions in modern societies could

be transformed in order to avoid environmental disasters (Gibbs, 2000). The original, technology related conceptual understanding of ecological modernisation, the ‘technocratic’ approach, where ecological problems could be solved by introducing new technologies or technological approaches, has been complemented with ideas of the modernising of social processes in ecological aspects; a ‘sociocratic’ approach, cf. Table 2. Both enjoy broad acceptance nowadays (Jänicke, 2000; Mol & Sonnenfeld, 2000; Mol & Spaargaren, 2000). Christoff (1996) and Gibbs (2000) distinguish the two by a Weak (technocratic) and a Strong (sociocratic) notion, respectively.

Table 2 Two concepts of ecological modernisation (from Jänicke, 2000; Gibbs, 2000)

Technocratic – Weak

Technological solutions to environmental problems	Incremental and radical innovations to improve environmental conditions including the social technology to stimulate such innovations and their diffusion
Ecological modernisation as economic-technical transformation	

Sociocratic – Strong

Broad changes to institutional and economic structure of society incorporating ecological concerns	Change of life-style, consumption patterns, institutions and paradigms (inter-generation solidarity, sufficiency)
Ecological modernisation as social-institutional transformations	Reflexive, open-ended ecological modernisation

In its sociocratic form, ecological modernisation, as part of a fundamentally sociological discussion, is identified as both a way of analysing policy discourses and as a theoretical, prescriptive basis to encourage a shift towards more environmentally friendly modes of industrial growth (Murphy & Gouldson, 2000; Jänicke, 2000; Gunningham & Sinclair, 2002). Core themes of ecological modernisation theory can be grouped in five clusters (Mol & Sonnenfeld, 2000) which all are present to varying degrees and with more or less significance in the two main conceptual approaches:

1. Changing role of science and technology,
2. Increasing importance of market dynamics and economic agents,
3. Transformations in the role of the nation-state,
4. Modifications in the position, role and ideology of social movements,
5. Changing discursive practices and emerging new ideologies

In his book “The Politics of Environmental Discourse” (1995), Maarten Hajer vividly describes the term ‘ecological modernisation’ as the emergence of a new societal paradigm. Intrinsic in this change is a shift from reactive and passive attitudes in industry and away from an insistence that pollution prevention is costly and thus diminishes profits, towards a new era where win-win solutions that create profits for greener companies are emphasised. However, in this shift, environmental problems and solutions were also redefined. The extent, character and understanding of environmental problems changed, and it became obvious that a more diffuse, volatile atmosphere could threaten companies. Complete neglect of the environment was no longer acceptable and it even became the demand that not only should companies take responsibility for their past offences (e.g. contaminated sites) but also for their products’ impacts from cradle to grave. In addition, a host of new actors entered the field. The traditional involvement of production engineers, external consultants and technical officers from local authorities was not enough anymore, and they were now accompanied by consumers, suppliers, NGOs, bankers, investors, insurance companies etc. One way of exemplifying this change is by the Greening Triangle, which illustrates that both problem understanding and policies have become broader in scope and more adequate, as well as involving more actors and incentives (Figure 1).

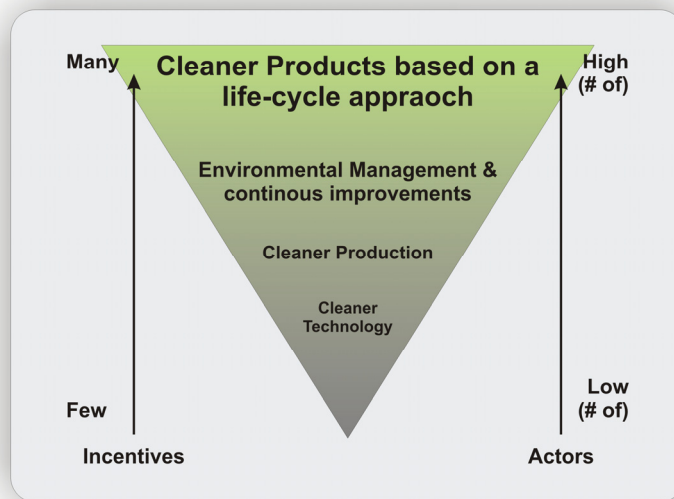


Figure 1 The Greening Triangle

However, it is important to have in mind that the actors not only apply pressure, but also provide knowledge and information – about problems and about solutions – and that they “(...) can spontaneously generate further technological and social

innovations.” (Roome, 2001: 70). In other words, ecological modernisation when accepted normatively may impact and change our view on ‘environment’ and the associated (pyramids of) problems, incentives, solutions and actors. This is illustrated in Figure 2, where the first four layers focus mainly on ‘environment’, while the final (ocean green) layer represents aspects of sustainability. The move from the inner towards the outer layers may be attributed to ecological modernisation.

However, ecological modernisation tends to focus (only) on the dichotomy between environment and economy, which are only two of the ‘pillars’ of sustainability. The most broadly accepted business case in this dichotomy has been the notion of eco-efficiency (DeSimeone & Popoff, 1997; Dyllick & Hockerts, 2002). A third pillar, social development, is often either forgotten, well-hidden, or lives a life of its own (Kirschten, 2005; Dyllick & Hockerts, 2002). A successful move toward a more sustainable society does, however, not only mean to make choices between existing objectives. Rather it involves pursuing new forms of development to achieve and support them all. Separating the three domains of ecological, economical and social sustainability may impose barriers to actions that might otherwise support SD. A number of scholars (see e.g. Spangenberg & Bonniot, 1998; Spangenberg, 2002) argue that this then requires a fourth pillar of SD, namely institutional development. This pillar, or dimension, has also been defined as involving second order issues, including aspects of transparency and participation, reflectivity, integration, and inter-generational foresight (Konrad et al., 2006; Steurer et al., 2005). A space (or prism) for action and interaction, rather than a two-dimensional area, is then provided, and allows approaching any of the dimensions without losing the links to the other dimensions.

Maurie Cohen used the notions Human, Physical and Social capitals in her work from 1997 (Cohen, 1997) on combining the two prominent social theories on Risk Society (Beck, 1986; 1992) and Ecological Modernisation and discussing and outlining societies’ potentials in making the jump to ecological modernisation. She stressed the aspect of social capital “*as an especially important resource in negotiating alliances for difficult public-policy decisions.*”, and further stated, “*Societies that are well endowed with social capital and have dense networks of secondary associations are typically better able to create the channels of communication across diverse publics required to build concurrence to complex problems.*” (Cohen, 1997: 116).

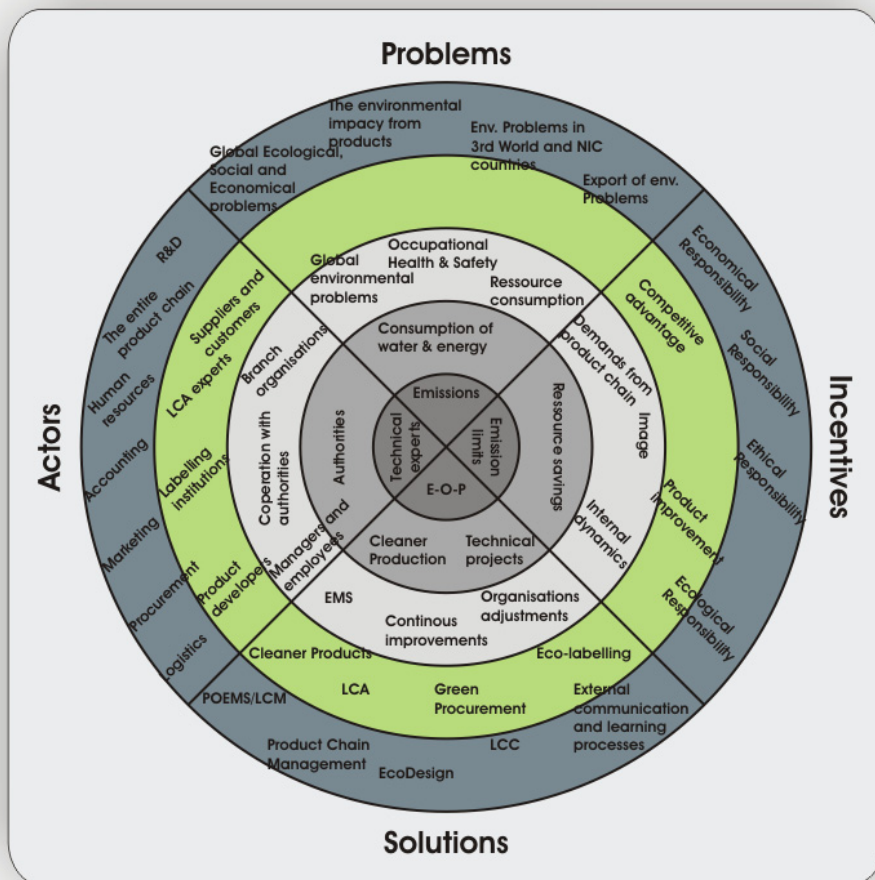


Figure 2 Problems, solutions, incentives and actors associated with ‘environment’ mainly and ‘sustainability’ ultimately (adapted from Thrane & Remmen (unpublished))

Four capitals and the Prism of Sustainable Development

In Figure 3, the idea of sustainable development is envisaged as maintenance and accumulation of different types of ‘capital’. Without going into the question to which extent one kind of capital may compensate for another (weak vs. strong vs. balanced sustainability), see e.g. Neumayer, 2003; Kjærgård & Bondesen, 1997; Steurer et al., 2005), we can think of sustainable development as a process, which increases – or as a minimum does not reduce – the natural capital (traditionally, the

ecological pillar), the human & intellectual capital (traditionally, the social pillar), the production capital (traditionally, the economic pillar) and the social capital that society depends on.

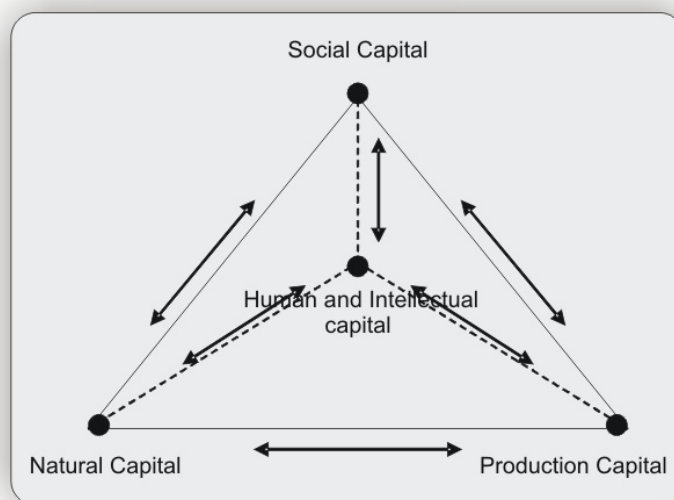


Figure 3 Prism-model of Sustainable Development. Interlinkages are shown as arrows between the four capitals of SD (adapted from Spangenberg & Bonniot, 1998)

Very shortly, the term natural capital refers to natural resources and eco-systems; human capital refers to the health, education and competence of people; production capital is the stock of buildings, tools and machines used in production of goods and services. Social capital, finally, is composed of the institutions², which form the language, trust and networks that make continual social interaction possible. However, it may be problematic to use the term ‘capital’ in these ways since it often confers the idea of a stock, which can grow and decline. Because of the diversity and incomparability of the elements in the stocks, it is often impossible to measure the size and the growth or decline of them in meaningful ways. There are aggregation and measurement problems for all of the capitals mentioned above. Social capital, which is defined as a set of rules, habits and norms, is almost impossible to imagine as a stock. The use of the notion of capital, however, has become quite common in these connections and therefore we may think of it as a collection of different things rather than as a homogenous stock. The meaning inferred here is then that of a ‘potential’ that can change over time depending on how it is being put to use, developed or exploited.

² Referring to its sociological meaning, see also the section on institutional theory, p. 31.

Furthermore, sustainability may be understood as a continuous process that requires balance between (the emergence of) problems and our capacity or capabilities to solve these problems. Sustainability thus *“... refers to a process and a standard – and not to an end-state – each generation must take up the challenge anew, determining in what directions their development objectives lie, what constitutes the boundaries of the environmentally possible and the environmentally desirable, and what is their understanding of the requirements of social justice.”* (Meadowcroft, 1997:37).

Understood this way, the concept of sustainability almost becomes synonymous with a common definition for ‘innovation’:

“To be more specific it is the process of matching the problems (needs) of systems with solutions which are new and relevant to those needs (...)” (Rickards, 1985:28)

The business link to the natural, production and human & intellectual capitals of sustainability has been argued widely. Gladwin, Kennelly & Krause (1995) stated that sustainability of either capital alone is not sufficient, and Elkington (1997) later introduced the ‘triple-bottom-line’ concept. Special sustainability indexes have emerged on stock exchanges around the world (e.g. DJSI - Dow Jones Sustainability Index – and FTSE4Good), and companies increasingly have an eye to concepts like the Global Reporting Initiative (GRI), the UN Global Compact, etc. To complement the environmental dimension, management systems for social accountability (e.g. SA8000) and occupational health and safety (e.g. OHSAS 18000) have emerged. Dyllick & Hockerts (2002) argue for going “beyond the business case”, i.e. expanding firms contributions to sustainability (and view of same) to include more than ‘eco-efficiency’. Hockerts and colleagues (Hockerts, 1996; 1999, Dyllick & Hockerts 2002) introduce the notions of ‘eco-effectiveness’, ‘sufficiency’, ‘socio-efficiency’, ‘socio-effectiveness’ and ‘ecological equity’, which in combination with eco-efficiency shall cover cases and criteria for corporate sustainability. A schematic has been provided in Figure 4, pointing to the different ‘cases’ made for sustainability, i.e. the natural case, the production case and the human & intellectual case.

While Hockerts and colleagues no doubt have advanced our understanding of many underlying issues of sustainability and in certain cases provided a framework for action, they seemingly view business as a re-active entity being influenced by wider society rather than being an active partner in shaping new paths towards sustainability. That perspective may be limiting and not do many parts of the sector justice. It may also be incompatible with the notions of ‘governance’ and ‘public-private partnerships’. The following sections will discuss this.

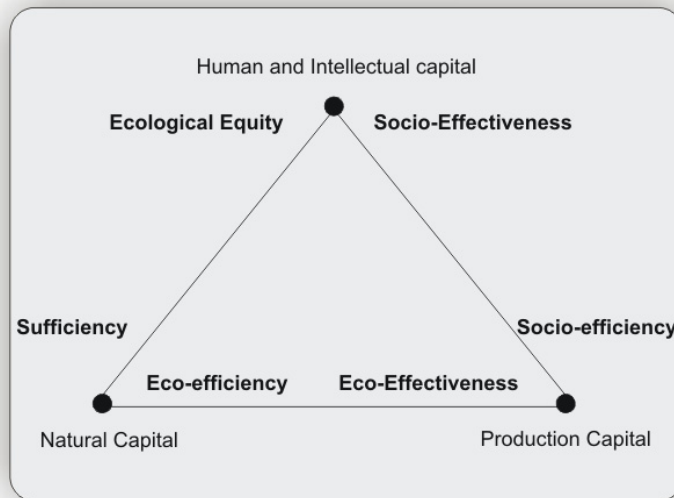


Figure 4 Triangle of Corporate Sustainability (adapted from Dyllick & Hockerts, 2002)

Governance

Regardless of which model one chooses (Prism, pillars or any other of the countless schematics available to depict our understandings of ‘sustainability’), when it comes down to practical implementation, the concept of SD often disintegrates into nothing more than rhetoric, disguising well-known conflicts about concepts, goals and instruments (Voss & Kemp, 2005; Posch & Steiner, 2006). Voss & Kemp further argue that the challenge of sustainable development must be addressed through “*new forms of problem handling, in which feedback is injected into governance*” (page 4). Governance is here understood as “a mode of social co-ordination or a negotiation method to solve contentious problems among political and non-political actors”. In terms of sustainability, it includes issues of policy integration; developments of common objectives, criteria for and indicators of progress; information and incentives (for practical implementation), and programmes for system innovation (Kemp et al., 2005; Farrell et al., 2005). Governance, as institutions and innovation systems, may be supra-national, national, regional and local. As such, governance and the institutional dimension (or social capital) of sustainability may in many instances be equated. This can then again be equated to a partnership understanding such as the one developed and marketed through and after the World Summit on Sustainable Development in Johannesburg, South Africa, in 2002. Here, Public-Private Partnerships (P3s) were heralded as the main pivotal mechanism for stakeholders to come together and work united for a sustainable future. And thereby also a mechanism where

responsibility for being much more pro-active was accepted generally by the business-sector.

Networks & Public-Private Partnerships

A quick search on Google Scholar reveals almost 16,000 hits for the term “Public Private Partnerships”; a bit more than if you search for the singular, which will result in almost 12,000 hits.

The diversity and range of scholarship in the field is immense and include for example partnerships in the US prison system (Schneider, 1999), global partnerships in health and for health development (e.g. Bazzoli, et al., 1997; Buse & Walt, 2000), partnerships for urban governance (e.g. Pierre, 1998), partnerships for environmental management (e.g. Glasbergen, 1998; 1999), and partnerships for sustainable development (e.g. Roome, 2001; Malmborg, 2003).

A public-private partnership is thus a rather general term that can be applied to a number of different subjects, and such partnerships can be viewed as being formed due to a multitude of reasons. Often, it is in a context where a private business venture or a government service is funded and operated by means of a partnership between government and one or more private sector companies. In terms of for example environmental services, such partnerships may be found in the privatisation and operation of e.g. water and sewage works, wastewater treatment plants etc., and the goal may be to provide same or better environmental service in a more economically feasible way. Often of a local or regional nature, these partnerships are sometimes also supported by the international community through international organisations’ programmes. The UNDP initiative “Public-Private Partnerships for the Urban Environment”, <http://pppue.undp.org>, is an example of such. In this context, the partnership can be viewed as involving contractual obligations and relations, and transfer of responsibility.

Other definitions of P3 focus more on collaborative aspects and formation of partnerships as a new form of cross-sector collaboration or as a network between several parties that have common objectives and are united in achieving their goals. As mentioned before, The World Summit on Sustainable Development (WSSD) in Johannesburg in 2002 promoted actively the establishment of such partnerships, which should revolve around sustainable development as a goal, and the voluntary collaboration between communities, governments, businesses and NGOs to achieve this goal. In this context, the Copenhagen Centre (which itself can be defined as a public-private partnership) provides a meaningful, albeit broad, definition:

“People and organisations from some combination of public, business, and civil constituencies, who engage in voluntary, mutually beneficial, innovative relationships to address common societal aims through combining their resources and competencies.” (Nelson & Zadek, 2000:14)

Thus, in their own words, The Copenhagen Centre’s partnership definition is that of a ‘social partnership’, i.e. focusing on aspects of social cohesion and economic competitiveness. However, the definition can be equally valid in a ‘full’ sustainability context, and it can also be used in the less broad environmental one, where economic competitiveness is of equal importance but the notion of ‘social cohesion’ is replaced by that of ‘environmental management’. The contents and principles of the partnership will, however, differ and as a consequence, so will initial and perhaps even ultimate success-criteria.

Often, the major stakeholders in public-private partnerships are identified as being from government, non-governmental organisations, international organisations, and private companies, who all have their particular reasons for joining or initiating a partnership, and each bringing different competencies and resources to the table. It follows that multi-stakeholder partnerships thus consist of more than two major stakeholder-groups, and may be seen as the form of governance identified in the preceding section.

Why become a partner?

It may be argued that growing business responsibility for the environmental, social and economical contexts that they operate in is a response to the various forms of increasing pressures from NGOs, international organisations and governments (Oliver, 1991; Murphy & Bendell, 1999; King et al., 2002; Lehmann et al., 2005). As such, civil society may be assuming more and more power over how corporations behave and the response by (some) businesses seem to be to engage in partnerships to be able to minimise the risks that this presents. While this then to a certain extent may explain some of the reasons for the private sector to enter into partnerships, it does not explain why also the public sector, NGOs, International Organisations, and governmental organisations do the same. Furthermore, with an increasing number of partnerships and networks, the questions of in which ways they are instrumental in bringing about a more sustainable society, and if they ‘work’ in all societal contexts; become pertinent, both for us as researchers, but equally so for network-brokers³. Further, the questions of how and where formal and informal learning, education and research fit into the context is important? And finally, what about development aid?

³ A broker is an actor in an intermediate position between two other actors, a sender and a receiver; cf. for example Gould & Fernandez (1989), Malmberg (2004) and Borrás (2007).

Research framework

From these questions, the notions of Partnerships for Sustainable Development, Green Public-Private Partnerships, and Green Networks came about, and they subsequently became the focus of the research, with Ecological Modernisation and Sustainable Development as the guiding analytical frameworks. In other words, the sustainability debate combined with Ecological Modernisation Theory and the notions of networks and partnerships, is this in any way leading us towards sustainable systems of innovation⁴ and sustainable societies (i.e. societies where everybody, everywhere and at any time can lead a dignified life)?

In all this, the theoretical focus was not really on innovation systems per se, but more on the underlying issues of *institutions* (e.g. DiMaggio & Powell, 1983; March & Olsen, 1984; North, 1990; Jepperson, 1991; Powell & DiMaggio, 1991; Scott, 2001; Crossan et al., 1999; Johnson, 1992; Edquist & Johnson, 1997), *stakeholders* (e.g. Freeman, 1984; Donaldson & Preston, 1995; Steurer et al., 2005; Jones & Wicks, 1999; Rowley, 1997; Mitchell et al., 1997; Frooman, 1999), and *networks* (e.g. Weick, 1982; Granovetter, 1973; 1985; Grabher, 1993; Håkansson, 1989; Håkansson & Snehota, 1995; Uzzi, 1997; Søndergaard et al., 1997; Jones et al., 1997; Powell, 1990; Gulati & Gargiulo, 1999; Dyer & Nobeoka, 2000; Wellman & Berkowitz, 1988; Galaskiewicz & Zaheer, 1999; Rowley, 1997), and with an initial analytical framework as presented in Figure 5.

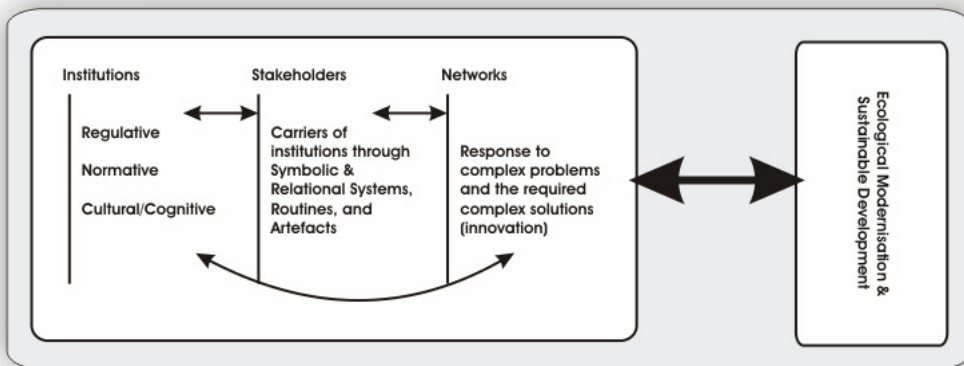


Figure 5 Analytical Framework for the dissertation

⁴ Defined as "... constituted by human, natural and social elements and relationships, which interact in the production, diffusion and use of new and socially, environmentally, economically and institutionally useful knowledge that contributes to sustainable production and consumption patterns." (Johnson & Lehmann, 2006)

The idea behind this framework is that Ecological Modernisation and Sustainable Development both provide the challenges for our (stakeholder) current way of life and doing business (institutions), and are the solutions (viewed normatively, that is). The networks and partnerships may provide us with better opportunities to face and respond to this challenge, and may perhaps be viewed as a sort of intermediary or a buffer between individual actors or stakeholders and the complex problems (represented by for example SD).

“The greening of the whole economy is not possible without institutions that provide new scientific knowledge, new skills and competencies, new legal regulations, needed financial resources, and a proper communication infrastructure. But while national governments can set up new supporting institutions, it is more difficult for them to make the system working because here proximity is often decisive. In this respect, regional governments may be more efficient.” (Schienstock, 2005: 106-107).

In the next parts, the dissertation itself is discussed, as is the research process behind it and the articles contributing to it. The various sections are on the one hand intended to provide an overview of the framework of the research, including a short introduction to the context, the cases and the articles written; this part is titled “On the dissertation and research process”. On the other hand, the sections are also aimed at discussing and developing the theoretical and conceptual aspects of the research; a part titled “On the theoretical framework”. And finally, the aim is to draw conclusions based on what is presented in this ‘wrapping up’ and on the articles that form part of this PhD project, as well as provide some practical perspectives of the research; this part is (fittingly) titled “Conclusions & Perspectives”.

On the dissertation and research process

With the onset of the 1980'ies, international awareness focused increasingly on the connection between development and environment. In 1987, the World Commission for Environment and Development published its so-called Brundtland Report, "Our Common Future" (WCED, 1987), and the United Nations followed up with its own environmental perspectives up to and beyond the millennium (UN, 1987). At about the same time, the Danish Government and its foreign aid arm, DANIDA, published their guidelines and action-plans for development and environment assistance initiatives in Denmark and abroad.

"Poverty lies behind some of the most fundamental problems facing all developing countries in the years ahead. This applies to well-known problems such as widespread social deprivation, persisting population growth, environmental degradation at local, regional and global levels as well as wars and conflicts. (...) As a small country, Denmark has a vital interest in expanding international co-operation. A social and humanitarian tradition has taught us the experience necessary to face these challenges. Through our membership of the UN, the European Union and as a Nordic country, we have a strong basis for a constructive and effective effort" (MFA, 1994: 4)

Following the UNCED conference of 1992 in Rio de Janeiro, the Danish Parliament decided to establish a special Environment & Development Relief Facility and set up a number of new organisations (e.g. DANCED, DANCEE and DANCEA), which together with DANIDA were to be the mechanisms to finance and implement environmental assistance initiatives for developing countries, Eastern Europe and the Arctic. DANCED focused their assistance to newly industrialised countries in South East Asia and Southern Africa. Figure 6 shows the structure that was established and which was guiding Danish Environmental Assistance in the period from 1994 – 2000.

The strategy for development assistance (which included not only poverty alleviation, but also covered other areas such as the role of women in development, environment, and promotion of good governance and human rights), was based on five principles and formulated with due attention to problems faced by developing countries and areas, where Denmark could make a qualified contribution. These five principles were (MFA, 1994:5-6):

1. Danish development policy encompasses all our relations with developing countries, economic and political as well as multilateral and bilateral.
2. The development policy is flexible and must be continuously adjusted to new international challenges.

3. Danish development co-operation is rooted in the commitment to combat poverty affecting large groups of population in many developing countries.
4. Danish development assistance is directed towards the needs of developing countries.
5. Development co-operation affects large sections of society – both in Denmark and in the recipient countries. This requires active involvement of a large number of non-governmental actors in formulating, organising and implementing Danish assistance efforts.

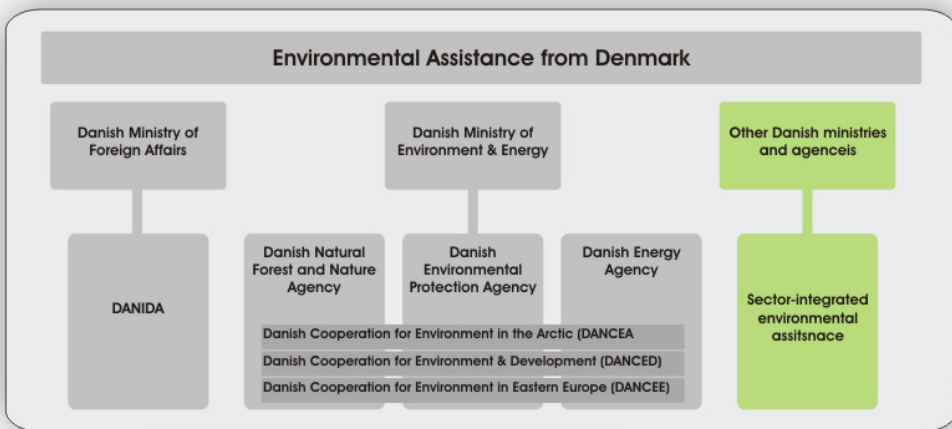


Figure 6 Structure of Danish Environmental Assistance from 1994 – 2000

In 1996, a special strategy for Danish Environmental Assistance (DEA) was developed and implemented to supplement the new general Development Assistance Policy, replacing DANCED's policy guidelines from 1994. The new strategy divided the responsibility for environmental assistance between DANIDA (programme countries) and DANCED (countries above a certain GNP threshold) and based itself on three overarching principles (DANIDA/DANCED, 2001):

1. to secure an environmentally sustainable use of natural resources
2. to prevent and limit the pollution of air, water and soil
3. to promote a sustainable use of energy,

The strategy was further supported by the notion that assistance was to be guided by local needs and with the support from education and research in both Denmark and recipient countries. In addition, surveys in 1996 showed that there was a general lack of qualified candidates to undertake and manage project in DEA

countries and that the resource base for environment and development assistance especially needed improvements in the fields of cross-cultural experience, development assistance experience, and interdisciplinary issues.

As part of the response to overcome this cavity, two Danish university consortia were established, DUCED-I&UA and DUCED-SLUSE (Danish University Consortium for Environment and Development – DUCED). The two consortia respectively covered “Industry & Urban Areas” (I&UA) and “Sustainable Land Use & Natural Resource Management” (SLUSE), and co-operated with similar consortia in Thailand, Malaysia and Southern Africa (TUCED, MUCED and SACUDE), establishing a university network of more than 20 universities in 5 countries.⁵

The immediate focus was on strengthening the Danish resource base by upgrading existing and developing new education. Over time, the local resource base in the co-operation countries was included, and research incorporated, e.g. through specific funding for employment of PhD’s and assistant professors. The programme was thus a relevant counterpart to the already established ENRECA (Enhancing Research Capacity in Developing Countries) projects that focused on building and/or strengthening the research milieus in developing countries through the assistance by and cooperation with Danish researchers (see e.g. Gaardhøje et al., 2006).

In October 2000, a new strategy, the so-called Partnership 2000 (MFA, 2000), was adopted by the Danish Parliament. With Partnership 2000, ‘Environment’ was to be an integrated part of all Danish development assistance, thereby enhancing it to reflect the traditional three pillars of sustainability, i.e. the promotion of environmentally, economically and socially sustainable development was seen as decisive to be able to alleviate poverty. And to emphasize this even further, poverty alleviation was to be sought through the establishment of long-term and mutually binding partnerships that should enhance the possibilities for a sustainable development process in developing countries. Society-wide partnerships were thereby to become the ‘institutionalising’ factor, and *“The point of departure is the resources and the development strategies of the developing countries themselves.”* (MFA, 2000:10); that is, ‘their contexts and not ‘our’⁶.

⁵ I&UA: 19 universities, 5 in Denmark, 4 in Thailand, 4 in Malaysia, 5 in South Africa and 1 in Botswana.

SLUSE: 10 universities, 3 in Denmark, 3 in Thailand, 1 in Malaysia, 2 in South Africa and 1 in Botswana.

⁶ One can of course question if this is not just words, and there is certainly work enough for a whole new dissertation on this issue, analysing the discourse in development assistance, the programmes and the actual projects carried out on the ground.

Partnership 2000 came about as a result of extensive analysis and consultation with a wide range of the Danish stakeholders, and laid down a new political foundation for Denmark's development policy along with objectives for the development assistance (OECD, 2003). It is note-worthy that 'Research' was provided a prominent role as a foundation for a new and more dynamic development aid; however, higher education was not mentioned at all. Following Partnership 2000 was an extensive analysis of 'Development Research' conducted by an international committee led by Gudmund Hernes. In April 2001, the committee published their report "Partnerships at the Leading Edge" (MFA, 2001) leading to a wide and at times heated debate on the role of universities (higher education and research) in development aid; the Danish Rectors' Conference sent in a response and most of the Danish universities in addition initiated internal groups working on the issues brought forward in the Hernes Report.

In November 2001, a new government was elected and several changes in the Danish aid-structure took place. All development aid was centralised around the Danish Ministry of Foreign Affairs, and an immediate transfer of all environmental assistance programmes from the Ministry of Environment & Energy (MEE) to the MFA took place. Development aid and co-operation became something for a 'closed group' and not really in the spirit of Partnership 2000, nor in the spirit of how 'things' are normally done in Denmark; something that was also pointed out in the 2003 OECD review of the Danish Development Co-operation (cf. OECD, 2003).

In all this, I personally fit into the grand scheme of things by having actively been part of the DUCED consortia – first as a student, then as an administrator, and finally as PhD Candidate – and by having been member of two taskforces on Development Research and Education commissioned by the Danish Rectors' Conference and AAU respectively. My own field work had taken place in Thailand, and it was this fieldwork I wanted to continue during my PhD. It was also in Thailand I had the most extensive contact network. For personal reasons, the overall focus of the studies thus became the Thai-Danish development co-operation (for the country programme, cf. MEE, 2001; and MFA, 2002), a co-operation that was still ongoing when I wrote the proposal and during the first couple of years of the research, however, has since been phased out (and is to finally end in 2010) as part of the new Danish Government's restructuring of the Danish Development Aid.

Summing up, while the theoretical framework revolved around 'institutions', 'stakeholders' and 'networks', cf. Figure 5, the practical framework was the development co-operation between Thailand and Denmark and if & how this could benefit from partnership-successes in e.g. Denmark, i.e. taking the

Partnership 2000 document for granted and through the following questions guide the research to be of (hopefully) direct value for future Danish and international development projects in Thailand. The questions asked are:

1. What are the primary conditions for the functioning and the success of sustainability related networks?
2. In which ways may such networks function as new and innovative governance structures for sustainable development?
3. In which ways can these networks contribute to conceptual developments⁷ and how may they contribute to capacity building?

The relation to Thailand and the Thai-Danish Country Programme (cf. MFA, 2002) falls especially within the component in the latter on “Support to Decentralisation of Urban Environmental Management through Strengthening of Local Government Organisations”. Many of Thailand’s environmental problems were caused by outdated institutions, inadequate policies, plans and enforcement, and lack of public participation (Kaosa-ard & Wijukpasert, 2000). Through for example decentralisation and public sector reform processes, Thailand actively tried to find solutions to these problems.

Based on the above, the project will seek evaluation of potentials and barriers to the introduction – in a greater extent – of network-based environmental management, including determination of needs for capacity development and education. In addition, different suggestions for the network-based approach to preventive environmental measures, focusing on established concepts such as Cleaner Production, Environmental Management etc. should be realised.

On Methodology

Due to personal involvement in a number of activities in Thailand, an action-research approach combined with case-studies was chosen as the way to conduct research. The two cases will be presented in the next section.

Choosing action-research is perhaps not the right word. More accurately, I believe it was the other way round. I decided not to commit to a stringent research method too early, but rather let the explorative way of doing research guide me, and be more or less phenomenon-driven. I feel this is especially important when trying to conduct research with the intention of

⁷ Defined as a process of forming new ideas, choosing and documenting these and bringing about new approaches to achieve pre-determined objectives. In this understanding, conceptual development is the part of technological development most close to ‘knowledge’ and ‘organisation’; technology is defined as consisting of four parts: 1) knowledge, 2) organisation, 3) technique, and 4) product.

having more or less immediately practical influence. Therefore, the action-research method grew out of the approach I had to the project, an approach where I would rather go out into the field and see what 'came my way' instead of trying to force 'something' out of the real world by the use of a theoretical approach that may not have been valid in the contexts I was studying. This is also referred to as a circular research process where one alters between theoretical and empirical studies that interact and contribute to an enhanced understanding and utilisation of each. Figure 7 illustrates this.

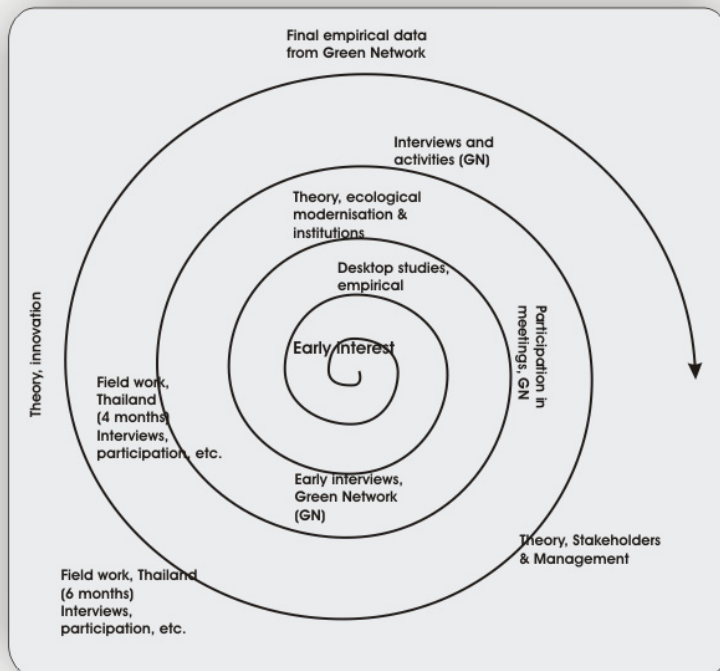


Figure 7 The circular process employed during this research

Furthermore, it seemed immensely practical when studying the activities and functions of networks and partnerships. Studying these phenomena from the outside of their realms is fairly difficult and full knowledge of specific aspects may only be obtained by becoming an active part of these (Dige, 2002). This is also the reason for spending almost a year in Thailand during my research. By becoming part of the networks and, to some extent, the societies I was studying, it felt easier to explain the intricacies and subtleties, the thought processes behind certain activities and certain cultural and cognitive aspects that I now had a first hand experience with rather than only a second hand narrative. As a foreigner, one with a Western mindset, even, this was

especially important in the Thai case. To support the methodological 'choice', I carried out most of my research with a qualitative approach. Interviews and questionnaires were prepared in order to answer 'why' and 'how' questions rather than 'how many' or 'how much'. In the concluding part of my research on the Danish case of Green Network, I did however add a combination of both quantitative and qualitative aspects.

No doubt, had I chosen a different methodology, the outcomes from the research would have been different. This is not to say that the results obtained and the conclusions I (and my co-authors) draw are not valid – they may perhaps just have been different had we selected a different methodological approach. As such, the knowledge we have created follow the approach decided upon, and had a different one been chosen, another but just as valid type and batch of knowledge would have been created.

On the Cases

The empirical framework for the research is grounded in the Danish and Thai contexts. Two network-cases, public-private partnerships, were selected to guide the research, the discussions and practical recommendations and implications. The Danish case was selected due to its 'criticality' status. It is a success case and has been widely used as guidance for establishment of similar networks in especially the Danish context (CASA, 2001; Lehmann et al., 2005). It was thus selected to analyse and assess the foundations for its success and the applicability in other environmental and cultural contexts.

The Thai case was similarly unique, however, could not be labelled with a 'success' status; at least not at that point. Rather, it was chosen due to its status as 'one-of-its-kind' in the Thai context.

The two cases were then put inside the action-research approach and thus fitted around the DUCED collaboration and experiences from that programme as well as new projects in the making; i.e. the development aid context, where focus would then be assessing and discussing where one case could learn and benefit from the other, and vice-versa. The two cases are presented shortly below. In addition to the two main cases, the research draws specifically on experiences from two concrete university network projects, one is the DUCED collaboration that has been presented earlier (cf. 17pp), and the other is a UniverCity collaboration established in late 2003 to develop new curricula for sustainable cities (cf. Lehmann & Fryd, 2008). The lessons learned, the conclusions drawn and future perspectives are ultimately left to the final part of this publication.

Denmark – Green Network

The story about Green Network begins in 1992 when the then National Agency for Trade & Industry (Erhvervsfremmestyrelsen), wrote out a competition for partnerships between the private and public sectors to become the national international showcase for Danish environmental knowledge and technology. All in all, four regional alliances participated in the competition, however, the Green Network, or Green City Network as it was known as in those days, did not win – at least not the competition – but came only second⁸. Quite a lot of work had however gone into establishing the co-operation and the network, and neither the public sector nor the private companies involved were prepared to just write that off. Instead, a re-constitution took place, making the network more local in nature, and where the promotion of environmental activities were preferred instead of the previous (due to the competition guidelines) focus on economy and export (Erik Ørskov, Personal Communication, 2003). The pivotal mechanism in the workings of the Network was to be a recognised (through diploma and Flag), seminal form for environmental management system, which was developed in a collaboration between several local companies, the local municipalities and the Danish consultancy firm COWI A/S. In June 1994, the Network was formally established with organisation, by-laws, activities, and business plan. A three-tiered membership was established reflecting both obligations and responsibilities towards the Network and its activities; Vejle county, the municipalities of Vejle, Horsens, Kolding, Fredericia and Middelfart constituted the public sector (O-members), approximately 30 companies the most active of the private sector (V-members) and a similar number of other organisations were part of the Network as so-called Interested parties (I-members); see Figure 8 for the Network's geography.

Financial support (in full) for the administration was provided by the county, while activities and development programmes were mainly financed through membership fees from the municipalities and the private sector with an additionally smaller amount coming from the I-members. In 1995, the first reports based on the Network's environmental management system and its associated guidelines and internal auditing were published, and the first Green Network Diplomas and flags were awarded (to 8 companies). Since then, many more has followed, and in late 2006⁹ a total of 152 member-companies held a diploma for environmental management.

⁸ The winner of the competition is known as Green City Denmark and is located in the Herning Region, and is commonly known as the Green Belt. However, in 2006, Green City Denmark filed for bankruptcy.

⁹ Data collection stopped at this point. A quick follow up show that today (March 2008) approx. 170 member organisations have a diploma for either their environment, OHS or social accountability activities (or all three).



Figure 8 The Green Network Region in Denmark

The developments in Denmark and internationally, as well as a certain innovativeness and foresight of the members of Green Network (and its administrative staff), have led to the development and implementation of many more activities aimed at contributing to solving problems, perceived threats, business opportunities etc. A current list is presented in Table 3 and correlated to internationally recognised meta-institutions (from Lehmann, 2006).

The Network has consistently been able to renew itself, and has now been active for almost 14 years. Contributing to this has been a relative stable local political environment, plus of course unwavering support from a relatively large part of the local industries. No major threats have been posed to the Network as both the national and international developments have provided ample basis to continue working with environmental issues and over time of course also broaden this to include also social issues, i.e. a move towards a sustainability focus. Green Network has followed suit, or rather has in many instances led the way. However, in 2006, the Network faced a major risk. With the changes in the structure of the Danish counties and municipalities, a large part of the foundation for Green Network started to disappear. Apparently, 2006 was a very hectic year with a restructuring of the Network going on. The outcome at present is continued support from current member companies, from the new municipalities as well as from the Region. All new municipalities agreed to take over the costs related to

staffing the Green Network secretariat; a cost that from the beginning of the network and until the end of 2006 had been borne by Vejle County. Thus, when the structural reform finally was reality (1 January 2007), Green Network was able to continue its work for a sustainable Region, and a more sustainable Danish Society.

Table 3 The Green Network Road from “Environment” to “Sustainability” (numbers from Green Network homepage, October 2006)

Meta-Institution	Basis	Green Network outcome and number of members certified by end-October 2006 (n/a = not applicable). For information about re-certification, see Lehmann et al. (2005).	
Environmental legislation and regulation	Command & Control	Self-regulation, adjusted supervision (Vejle Amt, 1999)	n/a
Cleaner Production (CP)	Technical manuals, shop-floor walks	Key numbers on water usage, energy, waste etc., focus-areas, industry clubs, waste bourse and other projects, Chemical Guide, and EMS manual (see below)	n/a
Environmental Management System (EMS)	Green Accounts (law), EMAS, BS7750, ISO14001	Manual for the preparation of an environmental statement (includes some OHS aspects). Latest English edition as of 2004 (Green Network, 2004c). A special manual for farms is available as well (Green Network, 2002b; 2005). EnvironmentalProcessConsultants, flag, logo and communication policies	Totally more than 275 different organisations; 190 current members (152 V-members and 38 public institutions)
Life-Cycle Assessment (LCA)	ISO14040	LCA Handbook (Green Network, 2002c)	n/a
Corporate Social Responsibility (CSR)	GRI, AA1000	Manual for drawing up a statement of the social responsibility of a company (Green Network, 2004d). SocialProcessConsultants, flag, logo and communication policies	19 total, all are currently members (14 V-members and 5 public institutions)
Occupational Health & Safety (OHS)	Danish regulation (smiley scheme), OHSAS18001	Manual for the preparation of an occupational health & safety statement (Green Network, 2006) , assistance-on-demand, flag, logo and communication policies	42 total, all currently members (35 V-members and 7 public institutions)
Sustainability	Brundtland report, UN definition	Green Network By-Laws, Vision/ Mission, Strategies, Activities, Logo, Communication policies	37 V-members and 8 public institution are currently certified according to two or all three statements

Thailand – Cleaner Production for Industrial Efficiency

The Cleaner Production for Industrial Efficiency (CPIE) project was conceived by the Thai Pollution Control Department (PCD) in early 1997. As part of the plans and ADB financing for construction of the large central waste water treatment plant, Klong Dan, in the Samut Prakarn province outside Bangkok, the idea was to utilise the project as a sort of carrot for private companies to pro-actively do ‘something’ about their environmental impacts. As the project had a financial connection to the wastewater treatment plant project, the natural focus was of course reductions in water and wastewater. An additional focus was to be energy consumption, and finally there would be a secondary focus on any other environmental improvements, e.g. chemical consumption. The goal was to reach 20 percent reductions in each of the primary goals and any other reductions were added value. The name of the implementation mechanism thus became 20/20+. Spatial alignment is shown in Figure 9.

The project was initiated in January 2000, and in a collaboration between an international and a Thai consultancy firm a secretariat was set up and staffed with both foreign and Thai nationals, and companies in the Samut Prakarn province recruited to participate in the network. Participation was free of charge, and there were no formal obligations associated with being a member. On the contrary, as with many similar Cleaner Production (CP) projects, financing for activities was available from the secretariat running the project. A certain amount of commitment was expected though, and companies needed to be able to formulate their own projects before financial assistance could be granted. The basic idea behind the program was “Teach a man to fish and you have fed him for a lifetime”, and much effort focused on building knowledge and the capacities to act within the companies so that these could actually practice CP.

In total, about 600 companies, municipalities, public organisations, universities and NGOs became members of the CPIE network. It is estimated that about half the members were actually active and participated in trainings sessions, developed and implemented CP ideas, etc. (Blatt, 2003).

Financing from ADB was limited to end-of 2003¹⁰, and the sustainability of the project therefore lay in building local capacities to continue after the consultants would leave. To that end, the project also included networking components, and

¹⁰ The Klong Dan corruption scandal (see e.g. <http://www.probeinternational.org/pi/index.cfm?DSP=titles&SubID=394>) put an end to the project in April 2003. No civil servants or technical experts associated with the CPIE project were involved in the corruption, however, the Royal Thai Government decided to put a halt to any activities associated with the ADB loan.

three Waste Minimisation Clubs were established based on geographical location. All members of the CPIE project automatically became members of the club associated to their respective geographical location in the province.

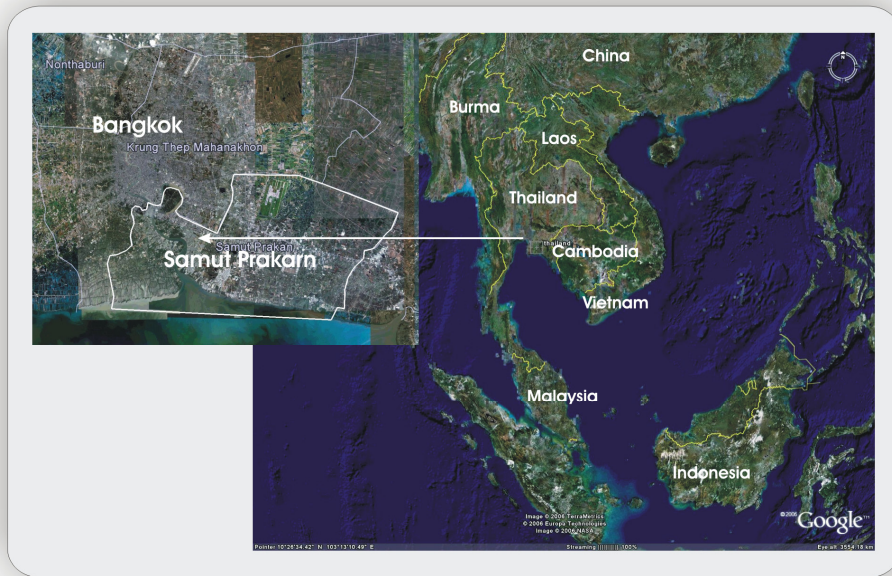


Figure 9 The CPIE Region in Thailand (imagery from Google Earth)

Today, the CPIE project is no more. No organisation has taken over from the established secretariat, and no formalised collaboration exists. However, bilateral communications and collaborations are still ongoing, and the PCD is utilising the CPIE experiences in similar projects elsewhere in Thailand, e.g. a Tha Chin River basin project, where the collaborative aspects of the CPIE project are utilised, and experiences from companies, who were involved in the activities, are disseminated and discussed among the new project participants at the Tha Chin river project. Seemingly, however, it stays at project level and no real institutionalisation of the CPIE idea has taken place.

It is unknown, how many of the companies that participated in the project are still practicing CP on their own or in a collaborative effort with other partners (e.g. from the original CPIE project, or through other initiatives). It would be of interest to carry out such a study, however, so as to be able to discuss the institutionalising effect of this type of development aid project and to know whether or not “teaching a man to fish” actually also enables and/or motivates that man to catch fish in the future.

On the articles contributing to the dissertation

During the work on this dissertation, several working and conference papers were produced. Most of these were subsequently reviewed, changed, reviewed again and ultimately published either in peer-reviewed journals or as book-chapters. Some of these works have been included as part of this dissertation, others have not. Below, I shortly present the seven papers (four articles, of which three are currently published and the final has been accepted, and three book-chapters, all of which have been published) contributing towards this dissertation. The presentation is not chronologically ordered, rather grouped as to how the articles contribute to the different aspects of the dissertation, to the partnership analyses and discussions, and to the arguments for or against moving towards a notion of Public-Private-Academic Partnerships.

Paper 1 is focusing on Public-Private Partnerships and why organisations may or may not pursue these.

Paper 2 is focusing on university roles in development assistance programmes and universities' contributions towards innovative societies.

Papers 3 & 4 are focusing on the case of Green Network in Denmark, the development of the network, the outcomes and the institutionalisation of and innovations through a public-private partnership.

Paper 5 is focusing on the Cleaner Production project in Thailand, its rise and fall, and seemingly failure in becoming an institutionalised approach to cleaner production in Thailand.

Paper 6 is a follow-up to paper 2 and is focusing on the same aspects however adding emphasis as to what universities bring to the table of partnerships for sustainable development.

Paper 7 focuses on experiences from an international Public-Academic Partnership, and discusses new ways of delivering education and developing capacities in order to be able to approach sustainable development more coherently. The focus is mainly on the Danish-Thai contexts.

The following table (Table 4) summarises the focus areas, the theoretical aspects covered and the papers' respective contributions. Abstracts for the seven articles are provided in Annex 1.

Table 4 Articles and their respective foci and contributions

Title	Published; Type	Focus	Theoretical Aspects covered
1) LaFrance & Lehmann (2005) <i>Corporate Awakening – why (some) corporations embrace public-private partnerships</i>	Yes; journal, Business Strategy & the Environment (Wiley)	Why do firms, international organisations, and other organisations network? Stakeholders in environment. What can they each bring to the ‘table’ of a Public-Private Partnership?	Stakeholders, Corporate Social Responsibility, Legitimacy, Public-Private Partnerships
2) Hansen, Lindegaard & Lehmann (2005) <i>Universities as Development Hubs</i>	Yes; book chapter (Brevitas)	Universities and their roles in strengthening innovation systems to create “auto-learning societies”. A new stakeholder in Public-Private Partnerships and in partnerships of development assistance.	Innovation system, partnerships
3) Lehmann, Christensen & Larsen (2005) <i>Self-Regulation and new Institutions: the case of Green Network in Denmark</i>	Yes; book chapter (Edward Elgar)	Case of network as a Public-Private Partnership. Institutional changes in governance, attitudes, and methods. Performing better, or just cheaper? Transaction costs.	Institutions; absorptive capacity; networks
4) Lehmann (2006) <i>Government-Business Relationships through Partnerships for Sustainable Development: the Green Network in Denmark</i>	Yes; Journal of Environmental Policy & Planning (Routledge)	Case of network as a Public-Private Partnership. Performance, outcomes and continuation.	Public-Private Partnerships; networks; institutionalisation
5) Lehmann & Jeppesen (2006) <i>Public-Private Partnerships: Facilitators of Environmental Improvement?</i>	Yes; book chapter (Hong Kong University Press)	Thai case – network of change, however lasting institutional effects are lacking. Institutional co-ordination and local ownership! What is ‘local ownership’?	Institutions, Networks, Public-Private Partnerships

<i>Title</i>	<i>Published; Type</i>	<i>Focus</i>	<i>Theoretical Aspects covered</i>
6) Hansen & Lehmann (2006) <i>Agents of Change – Universities as Development Hubs</i>	Yes; Journal of Cleaner Production (Elsevier)	Universities as agents of change – more leading role as a partnership broker. Independent and credible in the dyadic relationship between business & government – much needed in contexts where such relations a) are ‘hostile’ and/or b) do not exist.	Innovation Systems, partnership
7) Lehman & Fryd (2008) <i>Urban Quality Development & Management – Continued Education for the Sustainable City</i>	Yes; International Journal of Sustainability in Higher Education (Emerald)	Cross-border collaboration – it does not always work. Local ownership at both university and partner is needed for success. Diversity may foster innovation but it can also contribute to stand-still! Trust as a decisive factor.	Innovation Systems, partnership

On the Theoretical Framework

Moving back and forth between the Danish and the Thai context was one thing. Another was trying to make sense of the contexts and the empirical evidence I could gather from them. To that effect, I moved mainly between three different theoretical viewpoints, namely Institutional Theory, Stakeholder Theory, and Network Theory. The guiding theory was that of institutions, and the other two were then applied to shape my model and understanding of institutional theory in the context of sustainable development and ecological modernisation. In the following sections, I will present my understanding of each of these and how they were 'used' in the context of this research.

On Institutions & Organisations

Commonly, an “institution” is a synonym for an organisation or association. Referring to its sociological meaning, however, institutions are often viewed as ‘the rules of the game’ regulating how people interact (Johnson, 1992; Edquist & Johnson, 1997). Institutional theory may also explain how organisations can accommodate the various and often-conflicting pressures from their environment (Meyer & Scott, 1983). These pressures are not only material or economical in nature, but also political and, increasingly, social; i.e. not only money, but also legitimacy must be contemplated.

In his book “Institutions & Organizations”, Richard Scott (2001) provides a rather broad conception of what institutions are, thereby collecting the diverse range of theoretical approaches to institutional theory. In Scott’s conception, institutions *“are multifaceted, durable social structures made up of symbolic elements, social activities, and material resources. Institutions exhibit distinctive properties (...) because of the processes set in motion by regulative, normative and cultural-cognitive elements.”* (Scott, 2001:49).

Defined this way, institutions are essentially the way people make sense of and fit into the social world. Institutions are created and modified via interactions between social interest groups, by processes of co-operation, competition and conflict. Scott’s definition of institutions as made up of three elements has found wide-spread acceptance, although earlier theorist focused mainly on one of the three elements as providing the main supportive pillar in their conceptualisations of institutional processes. Douglas North (1990) focused for example mainly in the regulatory elements, Durkheim (1950; 1961) and Selznik (1957; 1996) on the normative elements, and Berger and Luckmann (1967) on the cultural-cognitive aspects.

Within these conceptions, the regulative element refers to rules and laws, mechanisms and capabilities for establishing rules, monitor others' conformance to them, and set forth sanctions to influence the behaviour of others. The normative element, on the other hand, is a group interpretation of values and norms, while the cultural-cognitive element refers to an individual's subjective construction of reality and taken-for-granted understandings (e.g. Scott, 2001; Mendel, 2002). As such the three elements range from explicit and direct provision of pressures for action to tacit processes embedded in presuppositions, each acts to influence the others, and they move in a continuum "*(...) from the conscious to the unconscious, from the legally enforced to the taken for granted.*" (Hoffmann, 1997:36).

The three elements are also what Scott refers to as 'pillars' on which institutions are founded (e.g. Scott, 2001; Mendel, 2002). Each of these pillars provides opportunities to explore institutional processes at work (Hoffman & Ventrasca, 2002), and each of the pillars is associated with different types of **carriers**, i.e. symbolic & relational systems, routines, and artefacts (Scott, 2001). cf. Table 5.

Table 5 Institutional Pillars and Carriers

Carriers		Pillars	
	Regulative	Normative	Cultural/Cognitive
Cultural Systems	Rules; Laws	Values, Expectations	Categories, Typifications
Social Systems	Governance & Power Systems	Regimes, Authority Systems	Identities, structural isomorphism
Routines	Standards, Procedures	Jobs, Roles	Recipes, Scripts
Artefacts	Objects complying with directives	Objects meeting standards	Objects possessing symbolic value

Adapted from Scott (2001:77).

Carriers of institutions provide the flow and exchange between broader societal institutions, governance structures and particular organisations or other types of collective actors. The carriers are characterised by being either sense-making structures and culture (symbolic or Cultural Systems); societal structures, which are closely linked to roles and identity as well as to formal power regimes (relational or Social Systems); or habitual actions, reflecting for example tacit knowledge, based on convictions that are not 'up-front' (Routines). Furthermore, these three carriers may produce what Scott coins as 'Artefacts' that in themselves become carriers of different institutions, e.g. in terms of being mandated by regulative authorities (Scott, 2001). The ISO14000 system series of environmental management can be

viewed as one such artefact that carries the institution of self-regulatory behaviour by organisations.

Within the conceptual frameworks of Sustainable Development and Ecological Modernisation, all four capitals must be contemplated. Environmentally or socially oriented action does not happen in isolation, but is by some regarded as strategic responses to demands and pressures (Oliver, 1991). Because these pressures change over time as we gradually become more aware of problems, solutions and incentives – and because they move from being local in nature to global and back again – a steady increase in actors will also occur (cf. Figure 2). Moreover, the diverse set of actors will participate in the creation and diffusion of different institutions through different world views, and they will influence the carriers of institutions (Jepperson, 1991; Scott, 2001), but in their own right also be such carriers.

The mixture of impressions varies according to each individual setting, but often companies find themselves in an ‘institutional field’¹¹ with very similar impacts, catching new ideas, concepts and norms. When considering environmental policies and sustainability, therefore, this field is not that different from company to company, consisting as it does of regulatory bodies, consumers, consultants, suppliers NGOs, etc., cf. Figure 2. The actors (stakeholders¹²), through their expectations and own worldview, put pressure on companies, requiring them to be legitimate, act according to general norms, and put forward convincing ideas and concepts worthy of imitation. The response from the company is often to seek normative conformity and external legitimisation (Gladwin, 1993; Meyer & Scott, 1983).

Furthermore, with a growing number of global organisations (UN, WBCSD, Greenpeace etc.) playing a role, the institutionalisation of ‘the environment’ is for example increasingly at ‘World System’ level. On the other hand, actual implementation of any regulative and normative institutions is done at local or regional level, where most people and organisations do business and have their day-to-day activities. From the pressure by these different stakeholders, the media and the Internet, what John Meyer (1994) coined as a “rationalized environment” is created, demanding a more or less worldwide uniformity from organisations. DiMaggio & Powell (1983) used the term “corporate isomorphism”. DiMaggio &

¹¹ An institutional field consists according to Scott (2001) of world system (e.g. Meyer, 1994), society (e.g. Parsons, 1953), organisational field (e.g. DiMaggio, 1991), organisational population (e.g. Barnett & Carroll, 1993), organisation (e.g. Williamson, 1985), and organisational sub-system (e.g. Shepsle & Weingast, 1987).

¹² See following section (p. 38) for a definition and discussion of stakeholders.

Powell further suggested that mainly three institutional forces are behind this, namely:

- **coercive forces**; formal and informal pressures wielded on organisations by the cultural environment in which they operate and by other organisations,
- **normative forces**; arising from the professionalisation of occupations resulting from the development of a cognitive basis and methods of work that can be diffused through formal education and/or professional networks, and
- **mimetic processes**; reactions to uncertainties related to ambiguous environments, technologies and unclear goals.

In line with DiMaggio & Powell, I argue here that these forces are dependant on the types of networks that a company participate in, i.e. supporting the notion of **collective rationality** based on the levels and systems that organisations and people are engaged in (Oliver, 1997), rather than individual rationality.

While earlier neo-institutional sociologists emphasised top-down processes; where rules, standards, norms, etc. constrained the processes and structures at the organisational level; the neo-institutional economists have emphasised the bottom-up processes, in which actors design their own institutional frameworks to solve collective problems. Newer research, however, emphasises an apparent inter-connectedness between top-down and bottom-up processes (Scott, 2001:196; Mendel, 2002). This is illustrated in Figure 10.

Used normatively, the concept of institutional creation, diffusion and up-take presented in Figure 10 provides a framework for how networks or intermediary organisations are of relevance when dealing with socially constructed notions such as environment or sustainable development. The context of sustainable development works on various levels, from the world to the local community, and it poses more and more complex challenges requiring the involvement of many different actors. The actors, at different institutional and organisational levels and from different contexts, provide competing understandings, arguments and knowledge. To incorporate all viewpoints would simply be too much, and the use of intermediary organisations is thus necessary – both from a bottom-up and a top-down viewpoint – to be able to either take up the institution or to de-construct it, change it and propose new understandings of it. Furthermore, regulatory and normative structures rely heavily on links between the different actors, and forming collaborations and networks will result in negotiation, new

understandings (through interpretation and innovation) and provide actors with frameworks for action that apply to their own context (Mendel, 2002; Schienstock, 2005).

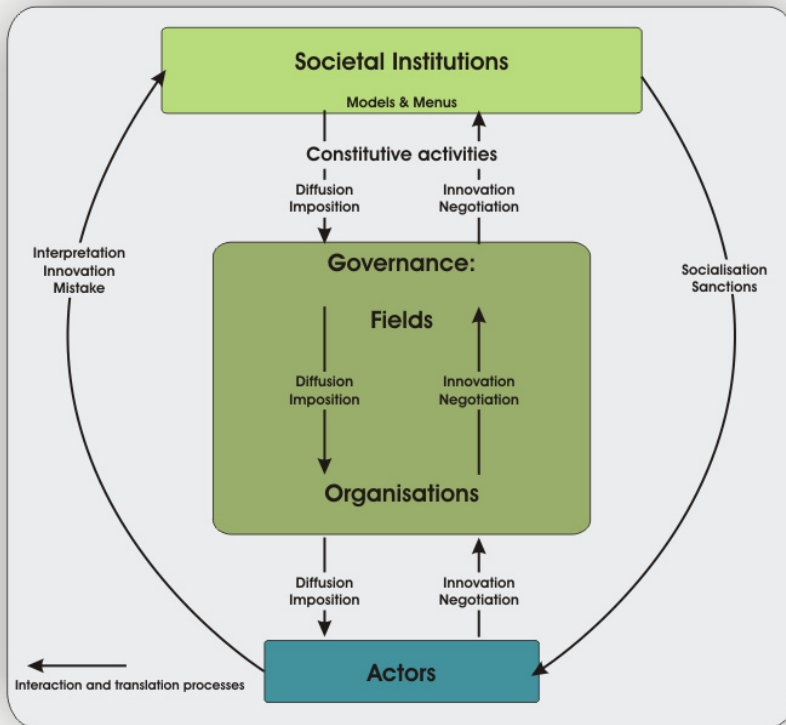


Figure 10 Institutional creation and diffusion (adapted from Scott, 2001:195)

Adoption of institutions can in some instances be very reactive and although they are seemingly integrated into the organisation, they are often de-coupled from the every-day activities, particularly from core activities. But institutions can also be integrated into the fabric of the organisation, becoming an active part of its daily life. Recent institutional theory stresses that this process is not merely passive, piling up institutions inside the organisation, but also active because it demands discretion and “strategizing” (Oliver, 1991), “translation” (Røvik, 1998) or “appropriation” (Jamison, 2001) to mould the institutions so that they fit in, i.e. institutional pressures do not always create uniformity (Milstein et. al., 2002).

In his book “Moderne Organisasjoner: Trender i Organisasjonstenkningen ved Tusenårsskiftet” (Modern Organisations: Trends in organisational research at the

millennium), Røvik has described how companies face an increasing choice of recipes for how to organise themselves and these must be translated to fit into the actual situation of the company (Røvik, 1998). Some recipes, though, never become implemented; they are ‘spit out’ or de-coupled from the organisation. Others, meanwhile, are institutionalised as scripts or schemes, which companies work according to. After a time, however, more modern or sophisticated recipes are adopted (Røvik, 1996). This constant flow of recipes or standards is typical of the situation for contemporary companies. What is important for survival and success is their ability to cope with the flow, siphoning off relevant recipes and incorporating them into their organisation and, in due time, dispensing with and replacing them. In this process is also included the decline or failure of old institutions and the innovation and negotiation processes of new ones. Inherently, this focus on capacity to absorb and translate new recipes is similar to the intentions of much modern theory of management, learning and innovation (Cohen & Levinthal, 1990; Zollo & Winter, 2002; Zahra & George, 2002; van den Bosch et. al., 2003) although in Røvik’s case, emphasis is not on knowledge per se, but on institutions and the way they are dealt with. In his work, the absorptive capacity of the company or network can be characterised by five fundamental features (Røvik, 1998:284):

- **High absorption capacity** is the ability to look for, find and absorb many different recipes at the same time. This depends on the open-mindedness of the organisation, its curiosity and its will to embark on new experiences.
- The **capacity to decouple recipes that do not fit in** means that those which blur the vision of the organisation or which are not compatible with the whole or part of the existing set-up of institutions are excluded.
- The **ability to translate new recipes in a quick and easy way** means that the internal costs of so doing are minimised, while weaving the recipes into the fabric of the organisation is relatively simple.
- Another key capacity is the **ability to detach old or worn down institutions** in one way or another.
- The fifth and final defining capacity is the **ability to preserve and reactivate older forms of institutional recipes**, i.e. having a reservoir of ‘tacit’ knowledge that can be reactivated in due course if necessary.

Based on many years of empirical studies, Røvik coined the ideal such organisations “multi-standard organisations” and described them as being a relatively loose collection of relatively many components and institutionalised

standards adopted by great many different actors at various points in time and through various fields.

In terms of studying partnerships and networks in the field of sustainable development, Røvik's approach seems particularly relevant both as a tool for evaluating successfulness of the partnership and in terms of describing the activities and actions necessary in creating and transforming institutions and in responding to institutional pressures. While Røvik's approach was developed and framed around large organisations, the use of the model is in the context of this dissertation transferred to networks and partnerships or in other words to the **governance** structures as presented in Figure 10, and in the interplay between the institutional fields of the societal level, the level of the organisational field, and the level of organisational population. The framework for institutional development, negotiation, uptake, failure and replacement that I propose and apply here is presented in Figure 11 below.

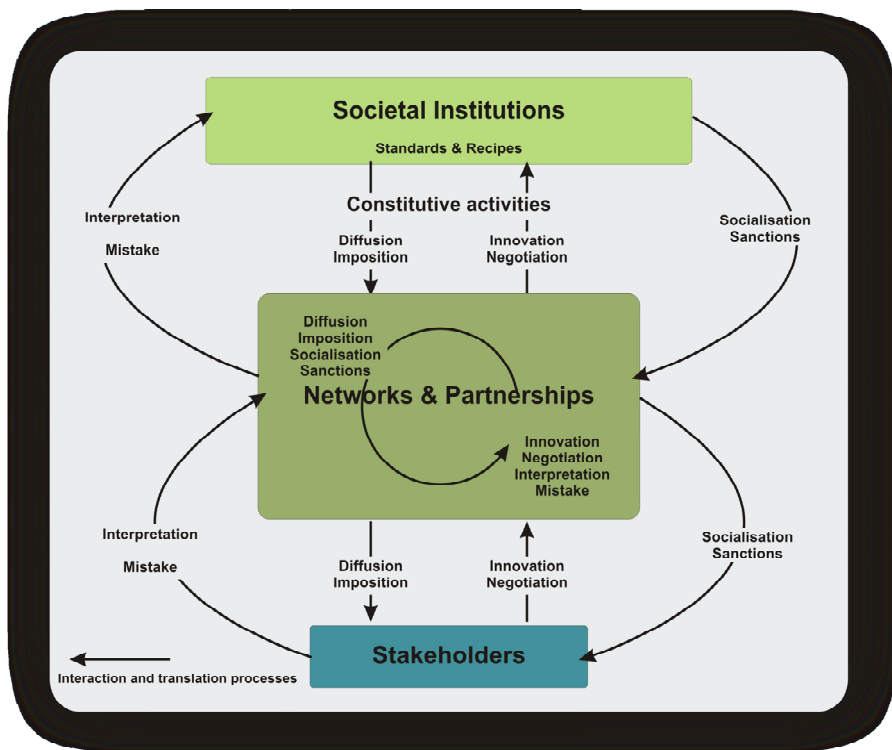


Figure 11 The framework for 'Institutionalisation' as applied in this dissertation

In the model, the notions of Actors and Organisations have been replaced by the concept of Stakeholders, and the notion of Governance has been replaced by that

of Networks & Partnerships. A more cyclical approach of institutional uptake, diffusion, innovation etc. has been applied as well (incorporating the mixture of top-down and bottom-up processes), and in line with Røvik's notions of standards and recipes, these has replaced what Scott in his model (Scott, 2001:195) labelled "Models & Menus".

On Stakeholders

Introduced predominantly by Freeman in his 1984 work "Strategic Management: A Stakeholder Approach, examining the relationship between the corporation, its external environment and its behaviour within this environment" (Freeman, 1984), stakeholder theory was a reflection on the at that time prevailing economic model of the firm, where the firm's sole responsibility was to its shareholders. Although there were earlier works by other theorists, e.g. Adam Smith (1937), Barnard (1938) and Eberstadt (1973), that identified other actors influencing the firm, Freeman was the first to fully elaborate on these relationships, developing a notion that corporations respond not to social issues but to stakeholder issues (Nasi et al., 1997).

Freeman defined a stakeholder as "*any group or individual who can affect or is affected by the achievements of the company's objectives*" (Freeman, 1984:46), and illustrated it through a 'hub-and-spoke' model. Other, early definitions include (cited in Mitchell et al., 1997) "*without whose support the organization would cease to exist*" (Bowie, 1988) and "*groups to whom the corporation is responsible*" (Alkhfaji, 1989). Supporting the hub-and-spoke model was a stakeholder grid consisting of stake (equity, market, influencers) and power (formal/voting, economic, political) that together sought to answer the questions of who the stakeholders are, what do they want, and how are they going to try to get it?

The 'stake' or 'interest' can be identified by examining the range of perceived stakes of multiple stakeholders. An equity stake implies that the stakeholder has an interest due to its ownership in the company. At the other end of the spectrum is the influencer stake, implying a stakeholder's interest in the company because it (the company) affects them or is affected by them in some way, even if not directly in a market sense. In between the equity and influencer stakes, the market stake can be placed.

Stakeholder power refers to the ability to use resources to make an event happen. For example, owners can expend resources through their voting power, by voting for directors or management or even 'voting' their shares in the marketplace. Customers and suppliers can extend their resources by switching to another company, raising prices or withholding or switching supply. Governments can of

course expend resources through their political power by legislating new regulations, but often also through their voting power in public companies or their economic power, e.g. by buying 'green' products..

The basis for the corporation to manage these relations¹³ is utilitarianism. In other words, as it is costly to identify and meet all stakeholders' different (legitimate or illegitimate) demands, the corporation must make trade-offs between its own goals and the goals of its stakeholders by identifying the type of effect that the stakeholder has or may have on the firm (and vice versa). In the words of Mitchell, Agle and Wood (1997) "*Defining (...) who and what really counts*".

Freeman and others (e.g. Clarkson, 1995) have suggested distinguishing between primary and secondary stakeholders. Primary stakeholders include for example owners, employees, suppliers, customers, competitors and investors, and are entities without whose continuing and direct participation or input the firm cannot survive. In Freeman's terminology, they have either an equity or a market stake. Secondary stakeholders can be business support groups, local communities, local government and NGOs, and may be defined as entities that in the past, at present or in the future influence or might be influenced by the corporation's activities without being directly engaged in transactions with it. Secondary stakeholders are not perceived as essential for the firm's survival, i.e. they are mostly 'influencers' in Freeman's terminology.

The above categories provide valuable principles for stakeholder analysis and allow for an understanding of the stake and power of various stakeholders and their influence on corporations for example to engage in networks and partnerships for sustainable development. However, for companies they may also prove useful in terms for example of identifying relevant partners with whom they can interact and co-operate in a given context. This is illustrated in Figure 12, where stakeholders are organised according to spheres of regulation, business and knowledge.

¹³ Since it is not the stakeholders that are managed but rather the relations with them, I agree with Andriof and colleagues (Andriof & Waddock, 2002; Andriof et al., 2002) that the notion stakeholder management should be replaced with stakeholder relations management.

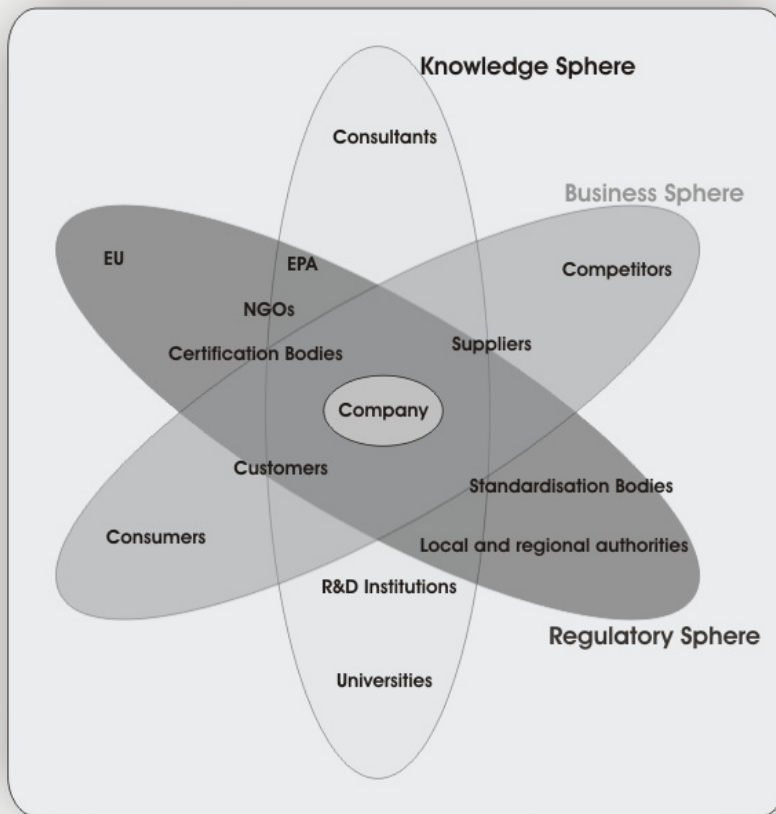


Figure 12 Example of Company-Level Network with three distinct stakeholder-spheres of regulation, business, and knowledge (adapted from Søndergaard et al., 1997)

Opposed to Freeman's rather rigid model, newer theory suggests that the dynamics between the corporation and various actors is based on complex linkages: a stakeholder network (Rowley, 1997; Key, 1999) in which the various actors pursue dynamic relations with other actors, and the actors can be members of a number of groups simultaneously.

Further, Mitchell et al. (1997) have suggested that stakeholders can also be evaluated and prioritized based on their power, urgency and legitimacy attributes (Mitchell et al., 1997; Nasi et al., 1997; Key, 1999). They identify eight types of stakeholders grouped according to if they possess none of the attributes, one, two, or all three. Further, Mitchell and colleagues argue that stakeholder attributes are neither steady state nor objective reality, instead they are socially constructed and

variable and conclude their research with the proposition that “*Power and urgency must be attended to if managers are to serve the legal and moral interests of legitimate stakeholders*” (Mitchell et al. 1997:882).

Frooman (1999) expands on this by analysing which strategic approach stakeholders take when they seek to influence firms, and thus Frooman builds on the notion that the attributes of stakeholders are variable and that at a given time these may depend on what the stakeholder seeks from the firm. Both Frooman and Mitchell & colleagues thus move away from stakeholder theory as a pure theory of the firm towards a theory of *stakeholders*. Timothy Rowley in his influential Academy of Management Research (AMR) article “Moving beyond dyadic ties: A Network theory of stakeholder influences” (Rowley, 1997) argue for moving towards a network approach when discussing stakeholders, and recent contributions build on a conceptual perspective of stakeholder theory (Steurer, 2005; Steurer et al., 2005). The unique feature within this particular perspective is that it looks at both stakeholder and corporate interests from the perspective of the concept in question, even if the concept is a corporate one, e.g. corporate social responsibility (CSR).

For the framework presented in Figure 11, stakeholder theory thus adds to the perspective of entities with an interest and stake in institutional shaping, innovation and change, both as singular entities and as participants in networks and partnerships. Furthermore, it may add to an understanding of why partnerships look as they look, and who participates, why and with which resources.

The final element in the framework, networks & partnerships, will be discussed in the following section.

On Networks and Partnerships

Stakeholders are social actors and social actors are embedded in a relational system (Granovetter, 1985), a network. In the Industrial Marketing & Purchasing (IMP) approach to networks (cf. <http://www.impgroup.org> and e.g. Håkansson & Snehota, 1995; Ford et al., 2003; Håkansson & Waluszewski, 2002), actors (or stakeholders) in a network (or partnership) may be described using three dimensions, 1) the activities they carry out and control, 2) the resources they control, and 3) the knowledge they possess about activities, resources and other actors in the network. In this case, for the individual actor, the network constitutes an expansion of his activity and resource foundation (including knowledge and information). In order to improve his or her position and exercise control, the actor may gradually enlarge this foundation and commit more and more resources

and engage in more and more activities. However, actors may also choose to participate in networks as free-riders, i.e. not commit many resources, or to simply try and obstruct any activities and progress that they cannot accept.

Networks may advance the flow of ideas, decrease uncertainty and provide a basis for the development of further ties between different actors (Kassinis, 2001). Granovetter (1973) refers to such ties as either weak or strong, and in his work suggests the notion of “the strength of weak ties”, i.e. that when actors have weak ties (are dissimilar), the value of ideas to innovation through their uniqueness is likely to be higher. Similarly, Weick (1982) argues that through loosely coupled systems, adaptability and flexibility is preserved and as such, simultaneous adaptation to conflicting interests may occur (Boons & Berends, 2001). Uzzi (1997) distinguishes between networks that are dominated by “arms-length ties” (generally viewed as market transactions), and networks that are “socially embedded” (through trust and reciprocity). Through his research, he finds that the ideas and information that are exchanged in socially embedded networks are often more holistic and implied than in arms-length networks. The importance of these types of ties for economic activities thus lies in their ability to provide resources that are not normally or easily available through market transactions (Agapitova, 2005). In order for implied information exchange to be successful, some shared paradigm or collective rationality need to be present, which in turn will reduce the dissimilarity of actors and move them towards homogeneity or isomorphism. So, on the one hand a network may need to be loosely coupled and with weak ties for innovation to occur, while it on the other hand may benefit from social embeddedness and homogeneity in terms of more easily transferring tacit knowledge, which is an important element of the knowledge flow that occurs in networks. From this it follows that to be truly successful, the network should therefore exhibit a dynamic behaviour in which it can travel between being dominated by loose couplings, weak ties and higher order learning, towards strong ties and tight couplings, where a common belief system is established displaying a higher order of trust and mutuality between the actors.

Partnerships emerge as a result of the development of social relationships and power relations through mutual trust and commitment. In terms of sustainable development, partnerships, especially Public-Private Partnerships, have become a new buzz word and should apparently be one of the new pivotal mechanisms of greening, underpinning the shift in regulatory regimes that through political and ecological modernisation has been going on for more than a decade.

Partnerships, such as the Green Network case researched in this dissertation, that involve on one side firms (business) and on the other government produce a set of

Government-Business relations that may also be termed non-market interaction (Sjöberg, 1993; Sorensen, 1994; Glaeser, 2000; Glaeser & Scheinkman, 2001) thus indicating a qualitative distinction from market relations and raising the issue of why such relationships are established, maintained and developed. This category of partnership may be looked upon from a structural point of view, i.e. how the relationship is organised; or from a behavioural point of view, i.e. how do the actors interact. Within the government-business sphere, the interaction and the activities are of primary interest, mainly because it is through the action/interaction that the connection between government and business develops, spearheaded by the accompanying learning process. (Sorensen, 1994)

Independent of the type of relations within the government and business sphere, the co-operation (or lack thereof) can be viewed as an 'organisation mode', and to fully understand this involves identifying the actors and the institutions they have created, describing the interactions between the actors, including the activities that the actors carry out, looking at the structure of the institutions and of the interaction, and evaluate the performance of the actors, in other words, network analysis as presented and discussed in e.g. Wellmann & Berkowitz (1988) and Wasserman & Galaskiewicz (1994). This, however, is not the type of research carried out in this project, and the principles and assumptions behind this type of analysis will therefore not be presented further.

Instead, the focus is on partnership approach, and in Table 6 five stereotype models of the role of the public sector in relation to the private sector are presented. Based on an institutional approach but drawing on several other theories, such as network theory, organisational theory and state theory, the Partnership Model, in short, represents an institutional arrangement between public authorities and private enterprises that is able to handle a multiplicity of interests through interaction that involve dialogue, negotiations and actions. The interaction process is essentially an institutionalisation and a learning process the outcomes of which are new worldviews and new ways of doing things. The learning process, however, is not always smooth but paved with conflicts and power struggles.

Table 6 Stereotype models of government-business relationships, presented in order of increasing governmental authority (adapted from Sørensen, 1994)

Type of Government	Public Authority (Public Sector)	Private Autonomy (Private Sector)
Laissez-Faire	Minimise. The government must fight internal and external enemies to assure the survival of the nation, and assure the structural pre-requisites of perfect competition.	Maximise
Mixed Economy	Division of labour between Government and private sector based on effectiveness and efficiency. A borderline shall be defined linked to welfare considerations.	
Partnership Model	Dialogue between government and private sector. The dialogue is taking place within a network of public and private organisations, and the borderline (cf. Mixed Economy) is replaced by a set of institutions that most probably will lead to a synergy (positive-sum) rather than just a division of labour (zero-sum).	
Public Policy Supremacy Model	The government represents unified political power and through policies, the government shapes or directs the actions for private business.	
Central Planning	Maximise	Minimise

The interaction between the government and the business community can be rigorous, personal and long-term or it can be disconnected, mechanical, and short-term. In addition, at one extreme, the two actors may not meet at all or meet erratically and formally leave the government to communicate with the business sector through the issuing of regulations, data collection etc. In such instances, the government exercises its power without consulting the business community, i.e. a Public Supremacy Model. On the other hand, government and business may establish several institutions through which they interact by means of information, communication, dialogue, negotiations, and common actions. The interaction mode will then be one of reciprocity, negotiation, or a kind of exchange, e.g. as financial support programs, and thus include both market and non-market interaction. Ideally, the interaction achieves a long-term learning-process through which knowledge is generated and employed by the parties. Such Government-Business relation can be referred to as a Partnership Model, cf. Sørensen (1994). Specific notions related to the model are ‘actor’, ‘activities’, ‘organisation & relation’ and ‘outcome’. The model’s essential features are shown in Table 7.

Table 7 Essential Features of the Partnership Model

Notion	Features
Actor	The principal actors are the private firms and their associations, the political bodies, and public authorities and institutions. Through interaction, intensive and often personal and long-term relations are developed.
Activities	Being political/economic institutions, the activities within these, aim at fulfilling ideological, strategic, and practical objectives. The activities comprise: policy formulation activities; campaigning activities; discourse activities; dialogues and negotiations, and implementation activities.
Organisation & Relation	The relationship may be formalised by establishing specific institutions, however, The actors are not seen as unified decision makers but are characterised by a multi-centred power structure. In its pure form, the Partnership model is characterised by interdependence, trust, cooperation, and mutuality in the relations between government and business.
Outcome	The close interaction turn the institutions and the relations between the government and business in general into a learning process, i.e. the institutions can be looked upon as knowledge generating units opting for a plus-sum game instead of a zero-sum game.

When compared with the IMP approach (p. 41), the Partnership Model adds aspects of organisation & relation as well as outcomes from the interactions, however, leaves out the notion of resources that each actor will bring to the partnership. Furthermore, the Partnership Model is specifically addressing the Government-Business Relationships and the governance aspect is thus limited to these two main actors. While the Partnership Model thus may be able to explain certain parts of the activities, outcomes and relations in the Green Network and other similar networks, it cannot explain all aspects. The model can thus benefit from both the IMP approach (the resource perspective) and other networking models, e.g. innovation networks (where the focus is specifically on generating innovations). The resource perspective is of particular importance for at least two reasons:

1. From an outcome point-of-view, synergies can be obtained if a diverse set of resources are brought together, resources that the single actor does not possess nor has easy access to. Actors bring different kinds of resources to a network; some of a monetary kind, others are in the form of knowledge and yet others may be in the form of political power; what set of resources brings about the innovations, the learning, the interactions needed for a

certain set of success is of importance from both a theoretical and a practical view-point; and

2. From a relational point-of view, knowledge about the type and amount of resources available to or committed by a singular actor in the network will provide information about both how important that actor views the network and what set of resources are available in the network and what resources may be needed from 'outside' the network.

So, while the proposed Partnership Model may be able to provide certain knowledge about the Green Network, it may also limit our view of the network as basically a relationship between Government and Business. Having studied the network, such a perception is in my opinion wrong, and the network may be better understood if viewed according to its focus and activities and as a dynamic multi-stakeholder partnership able to move between a core set of government-business relations (as described in Lehmann, 2006) and an out-come oriented network (beginning with environmental management as the core focus area to today's focus of sustainability).

In that sense, the notions of for example Green public-private partnerships (G-P3), multi-stakeholder partnerships for sustainable development (Bäckstrand, 2006) or sustainable innovation networks (Kirschten, 2005) that cover a very large array of co-operative efforts between a number of different actors¹⁴ may be more appropriate. All these terms may best be conceptualised as 'close' rather than 'arms-length' relationships.

Other types of public-private partnerships are found in for example the privatisation of environmental services, e.g. water and sewage works, wastewater treatment plants, etc; where the goal may be to provide same or better environmental service in a more economic way, or simply to privatise the service in question but without the sometimes negative connotations associated with 'privatisation'. These are inherently more market relations and thus arms-length ties.

Increasingly, academic institutions, (universities etc.) explicitly play important roles in partnerships for sustainable development and it may make sense to distinguish between partnerships without and partnerships with academia. Therefore, the notion Public-Private-Academic Partnerships is more suitable to cover the latter activities, while the notion of public-private partnerships should be left to activities

¹⁴ For example NGOs, business and local, national, or regional authorities co-operating in terms of 'greening' (understood as innovations in the products themselves or in the processes used to produce or distribute them in order to lessen ecological impacts) or 'making' our societies more sustainable.

where academia is not directly present, i.e. the former. Underlining this are the particular resources that academic institutions bring to the tables of these partnerships. In the following section this is highlighted.

Public-Private-Academic Partnerships (PPAP)

As one of the options in the pursuit of sustainable development, the notion of Public-Private Partnerships emerged and at the 2002 World Summit for Sustainable Development (WSSD) in Johannesburg, it was concluded that ‘partnerships’ should become a decisive factor in achieving global sustainability. As with the Rio Conference in ’92, academics played a substantial role in writing background papers etc. but were later squeezed out when politicians took over:

“And this remained the pattern with WSSD 2002, even though WSSD 2002 highlighted the importance of partnerships. Emphasis was, however, placed primarily on partnerships between business, government agencies and non-governmental organisations, rather than with academics.” (Fincham et al., 2005:24)

If that is really the case, what roles may universities play in partnerships for sustainable development? Do universities have something special to offer and what may it be? Are there any substantial experiences to fall back on? I personally believe there are, and much anecdotal evidence seems to support this, cf. for example Gaardhøje et al. (2006), AAU (2001; 2002), Fincham & Korrûbel (2003), Fincham et al. (2005), Jamison & Muchie (2005), Jeppesen et al. (2005). As part of this dissertation, three articles touch upon this subject, i.e. Hansen et al. (2005), Hansen & Lehmann (2006), and Lehmann & Fryd (2008). Further, the practitioner and research conferences EMSU (Environmental Management for Sustainable Universities) both in 2004 (in Mexico) and in 2006 (in Wisconsin, US) produced much literature and debate on this particular topic and presented various partnership experiences from all over the world. In a recent review on knowledge and action for sustainability, van Kerkhoff & Lebel (2006) provide a view-point not too dissimilar to the one I present here, namely:

*“(...) we reached a contrary view of the world, one in which research, politics, researchers and publics are intertwined in a constant struggle of justifications, explanations, and decisions in an uncertain and complex world. These questions encourage us to look at the relationships between research-based knowledge and action as arenas of **shared responsibility**, embedded within larger systems of power and knowledge that evolve and change over time. This conceptualization offers a more appropriate starting point for understanding the role of research in sustainable development than the conventional model of trickle-down, transfer and translation.”* (van Kerkhoff & Lebel, 2006:473; emphasis added).

These arenas (of shared responsibility) are what I have coined Public-Private-Academic Partnerships. With a specific outset in the partnership definition from page 11, and in the context of Sustainable Development, I define these as follows:

“Stakeholders from some combination of public, private, academic and civil constituencies, who engage in voluntary, mutually beneficial, and innovative relationships to address and build natural, human & intellectual, production and social potentials through combining their resources and competencies.”

The following figure show how this conceptually can be understood with an outset in environment, technology and collaborative projects and ending in governance and sustainability. The green triangle signifies approaches to sustainability related problems, and the red triangle signifies approaches to Public-Private-Academic Partnerships.

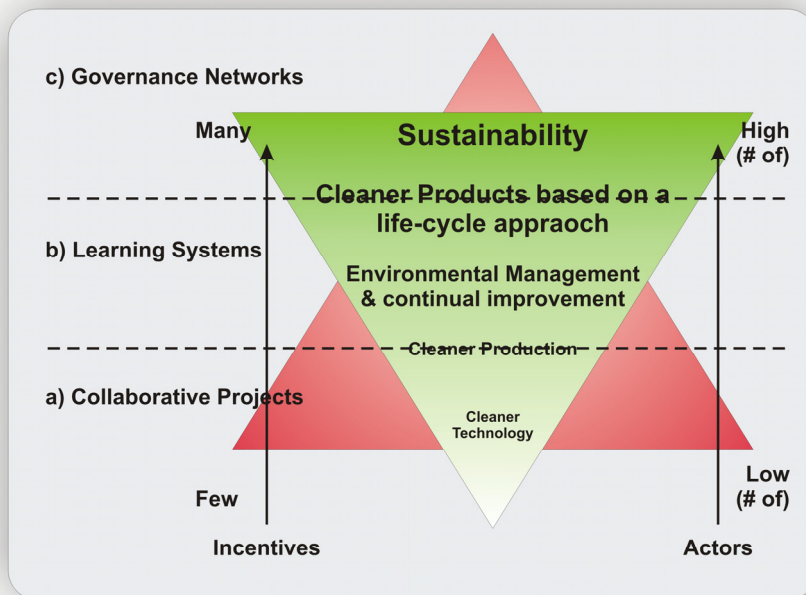


Figure 13 The Greening Triangle and collaborative P3s (red triangle).

Before moving on to final conclusions and further perspectives, Table 8 sums up and presents the major stakeholders in PPAPs and their respective competencies and resources.

Table 8 Major actors in public-private-academic partnerships (PPAP), their competencies and their resources

<i>Actor</i>	<i>Reasons</i>	<i>Resources</i>
Governments:	National and local governments are willing parties that see the opportunity of forming partnerships with other nations, organisations, and the private sector as a vital process that will help them attain their development goals. From the Northern perspective, governments in all countries have the responsibility for ensuring that its citizens have access to basic services such as clean water, food, shelter, and power. Many of the public-private partnership (the absence of academia is deliberate) projects now being implemented in developing countries are designed to aid in the provision of these exact basic services.	There may be varying degrees of involvement by many different levels of government in a P3, but in general, governments have a wide variety of resources that can contribute to the success of a partnership, including: specific subject information, financial, structural and human capacity, as well as an element of legitimacy that is associated with its involvement in the partnership.
Non-Governmental Organisations (NGOs):	<p>An NGO may have many reasons for becoming involved in a PPAP. Their knowledge or experience may have been requested by one of the other members to help find ways around the potential roadblocks of a project; the NGO may prefer to be involved in the partnership from a distance as a technical advisor or trouble-shooter; or NGOs can simply act as watchdogs that accept projects, which are structured in socially and environmentally responsible ways, while singling out and rejecting partnerships that are purely exploitative and solely concerned with financial profit.</p> <p>Access to funding is also of prime interest to the NGOs, however (as stated above), it is important for the NGO that it is not losing integrity and its status as watchdog.</p>	The participation of NGOs in a partnership can provide expertise and general awareness on issues that are relevant to the common goals of the partnership. NGOs can help influence policy, be involved in monitoring the implementation of the project, help ensure transparency, and promote community participation.

<i>Actor</i>	<i>Reasons</i>	<i>Resources</i>
International Organisations (IOs):	International Organisations have played a fundamental role in developing the framework for P3s. From the early stages of the Rio Earth Summit in 1992 to the Johannesburg Summit in 2002 and beyond, the various development and environmental departments of the United Nations have been active participants in the negotiation and formation of a sound partnership mechanism that will address sustainable development.	International Organisations, such as the UN, can provide the needed specialists in development, environment, economic and social policy making that are vital to the building of a partnership framework. Like the role of NGOs, IOs can monitor the progress and measure the success of partnership projects from an often independent and neutral position to help ensure that information coming from specific projects is accurate and unbiased. Another important part that IOs play is to act as the preferred medium in which states along with the private sector can come together to address global and overarching issues such as sustainable development. This medium both encourages and facilitates dialogue amongst all parties while being transparent to public interests.
Private Sector:	The involvement of business in P3s is multi-dimensional. Because the private sector is not publicly funded, the fundamental element of financial profit is crucial for business to be involved. This means the private sector may be attracted to invest both financially and technically in a partnership if there is a significant potential for return on investment compared to other available investment opportunities. By becoming part of a partnership that promotes sustainable development, companies have an opportunity to present a “good global citizen” side to their operations and may be able to bolster their public image. The potential financial win-fall for presenting their product or service to new markets can also be very attractive to the expansion of the business.	The private sector provides technical knowledge, skill, and experience in its specialised capacity. Further, the private sector often provides funding for specific activities and can commit human resources.

<i>Actor</i>	<i>Reasons</i>	<i>Resources</i>
Academia	<p>From a university standpoint, the involvement of academia in PPAPs for sustainable development will provide them (the universities) with access to ‘problems’ that can be used in their own research and/or education. New learning opportunities may arise from the participation and access to new or different kinds of knowledge is one of the potential gains. This of course relies on acceptance of a different kind of knowledge than the academic one, and thus also a move away from the ivory tower image that in some instances still sticks to universities and which does not generate trust or mutuality but rather discomfort for the other partners. Further, active academic participation may provide universities with new (and closer) links to traditional financial contributors of research, i.e. businesses, government, and international organisations.</p> <p>The role of the universities is not to bring “truth” to the other partners but to help with and stimulate learning activities. This may of course include traditional educational activities and research but more often universities may play a role as mediators and translators of new ideas and concepts not only “bringing these to the people” but in the very same move change these as they are fitted into the local context. The concept of translation seems to be very important and also to highlight the special role of universities in these partnerships. Translation not only entail ‘explaining’ but also ‘tinkering’ where concepts, scripts and routines are given new meaning in the very process of adapting them to the specific activities of the networks/partnerships.</p>	<p>Universities provide a number of different resources, but most specifically man-power (both students and researchers) and knowledge. In certain instances, universities may also provide funding, but most often that is in-kind contribution, i.e. their own work.</p> <p>Universities may though its independency act as translators or mediators and enhance partnerships’ credibility and legitimacy. As a partner, academia seems to be able to provide a specific ‘institutionalising’ resource, a specific social capital for the partnership.</p> <p>Universities also open up to larger networks, i.e. new and additional resources, through their traditional interaction with a great number of partners.</p> <p>And, finally, universities may offer a bridging between theory and practice, depending on the university’s outreach tradition.</p>

Conclusions & Perspectives

The overarching issue in this dissertation has been sustainable development, its definition and new ways to move towards more sustainable societies. Specifically, the dissertation has investigated the multiple aspects of networks, public-private partnerships, universities as development hubs and development aid, and their relation to the sustainability challenges we are facing.

The following sections will conclude on all these aspects of the dissertation thereby drawing on research presented in the seven contributing articles, as well as concluding on the more conceptual discussions presented in this volume. Perspectives of the research will be discussed and possible opportunities for enhancing the quality of development aid brought forward. Furthermore, recommendations for future research and for possible new angles on the existing research and research data will be presented.

The starting point will be to return to the three questions guiding the research; these were:

1. What are the primary conditions for the functioning and the success of sustainability related networks?
2. In which ways may such networks function as new and innovative governance structures for sustainable development?
3. In which ways can these networks contribute to conceptual developments and how may they contribute to capacity building?

Each of these questions will be addressed in the following section of overall conclusions, and will subsequently be related to the aspects of how the types of networks and partnerships found in the Danish context may contribute to new ways of delivering development aid in a partnership context.

Primary conditions for the success of sustainability networks

Building networks as public-private partnerships is not a totally new idea. It has been tried in many places around the world, often with success. In Denmark, the most successful of the networks is the Green Network in the now former Vejle County¹⁵. This network was among the first environmental public-private

¹⁵ With the Danish structural reform taking effect 1 January 2007, 13 counties were replaced by 5 regions. Vejle County was 'divided' and part of it is now located in the Region of Southern Denmark (Region Syddanmark) and part of it in the Central Denmark Region (Region Midtjylland).

partnerships (P3) established in Denmark. Its fundamental ideas about creating a sound basis for the environmental work of companies relied heavily on a model of co-operation that soon became institutionalised in the Network. Together with an organisational structure that maintained essential balances between the actors involved, this fundamental institution of co-operation paved the way for success. It created a learning organisation with the capacity to absorb new things (formal and informal institutions such as new or forthcoming EU legislation, management systems, etc.) from its environment, translate and codify them to its own needs (via new systems and manuals), and disseminate this knowledge to the network's members (via projects, trainings sessions, news-letters, seminars, etc) and to wider society.

Many other regional and local successors try to mimic the success of Green Network. Primarily this is done by taking over the manual used and issuing certificates and flags just as they do in Green Network. But this adoption of tools and practices is no guarantee for success. Many of the fundamental ways of operating Green Network are not transferred. Indeed, wholesale transfer of, for instance, institutions is probably not possible. Other regional networks will therefore face the problem of how to establish an organisation with some of the same absorptive capacities that have contributed to the success of Green Network, i.e. an organisation capable of receiving and dealing with all the ideas circulating in the environment of the network, taking in the most promising and translating them according to their own needs. To do this, not only are skilled and enthusiastic people needed but also organisational structures that can maintain the correct balances between the different partners involved in the network.

In spite of positive response to the potentials of sustainability related P3s in the North and in the South, the situations are highly different, making the prospects of such partnerships quite dissimilar. The disparate histories and contexts make the institutionalisation processes and the concepts of the P3s very different. In North, the environmental history is one of certain established traditions, a context of regulation and enforcement, along with widespread awareness among the populations. It is also a situation of growth economies and a high level of political stability, which lately has emphasised neo-liberal regimes where public spending in general has been put under pressure, leading to an interest in sharing resources and enhancing industrial regulation by advocating voluntary approaches and activities to go beyond compliance. Furthermore, little to no corruption and high public trust in governance structures that in addition more often than not are transparent and participatory, give rise to both the top-down as well as the bottom-up processes of diffusion and creation of institutions as illustrated in Figures 10 & 11.

In other words, the partnership model is more widely used in general and not restricted to the environmental sector.

In the South, environmental regulation has a much shorter history; one could say that it has more or less just started, and a context with lack of regulation & enforcement, much fewer resources in society at large and among governments, lower awareness and limited public interest. It is also in a context of quite different economic and political situations, more often with limited political stability and higher social and ideological tensions, where the (limited) state also is under pressure to cut spending. While this also leads some actors to investigate options for sharing resources and enhance industrial regulation by advocating voluntary approaches and activities to go beyond compliance, the constraints are numerous and big. This is often grounded in widespread corruption and a general distrust amongst stakeholders leading to less credibility. In the CPIE case, the result was premature closure of the partnership, and although a lot of work to continue the project without ADB funding took place, there simply were no stakeholder (or group of stakeholders) able to – or that could be trusted by a majority of the partners – to carry on.

In addition, the governance hierarchy is steep and of a kind, where mostly top-down processes occur. Coupled with the lower awareness of (and interest in) the environment and other sustainability related aspects, the bottom-up processes of negotiation and innovation may neither be encouraged nor taken as an opportunity. As a consequence, the innovation, interpretation and negotiations and general manoeuvrability of actors that we take for granted in a Western context are often either non-existent or at best blurred and sporadic in the Southern one.

“The promotion of clean development in Asia will require a new type of development platform, one based upon shared interests and goals and involving a broad and deeply rooted partnership among business, government, NGOs, development institutions, and the research and policy community. The prospects for establishing such a partnership for sustainable development in Asia are very good, and will go forward faster if strongly supported by international collaboration.”
(Stevenson & Evans, 2001:15)

In this context, universities may seem to be able to play a special role, and the concept of universities as development hubs is proposed. It is in part a response to the reflections by Stevenson & Evans on a partnership for clean development, and part in response to a need for trust, mutuality, longer term thinking, and development of capabilities locally and internationally.

In sum, the research shows that primary conditions for the success of these networks and partnerships primarily relate to:

1. Political will and support

Without the political will and support (financial and otherwise), the public sector cannot involve itself, and a Public-Private Partnership cannot be established.

2. Trust and credibility at individual and organisational levels

An actor will not commit resources if it does not trust other partners will do the same. An actor will also not encourage and enact the necessary transparency if it is unsure as to whether or not it can trust partners with the knowledge and information.

3. Mutuality regarding understanding of problems & solutions

Each partner will have their own specific agenda, but some kind of mutuality will need to exist for the partnership to work according to common goals. Some sort of collective rationality – a shared understanding of problems, solutions and incentives – must be present or established early on.

4. Long(er) term thinking - moving beyond projects and immediate financial returns

*Sustainability is ultimately a long-term goal, and it is generally obstructed by short-term thinking. This goes both for the public sector, whose politicians must think beyond their own term; and for the private sector, where focus must be on long-term rather than immediate financial returns. Further, projects, which are inherently shorter-term, must not **drive** but rather **support** the partnership – become stepping stones.*

5. Active participation by a wide range of stakeholders

Sustainability related problems are not limited to one sector but demand cross-disciplinary and -sectoral action. To include more stakeholders create opportunities for the network to share responsibility more broadly (or create a sense of shared responsibility), to share and control a wider range of resources including non-financial, and to provide access to a wider range of resources for each partner.

I will argue that these five points constitute the main framework that supports the partnership & network approach, and that without these (at least), this approach will fail.

The functioning of networks as innovative governance structures for sustainable development

Sustainable development is a contested subject and finding common ground on global or international level is perhaps too ambitious and non-constitutive. However, in an increasingly globalising world, the pressures from non-local entities and institutions must not be neglected. The dictum of “think globally, act locally” is becoming more and more important. Thus, sustainability must first and foremost be glocal; with a global and local understanding as well as local commonalities and commitment. And with local action. Good governance and governance structures are needed for sense-making and guidance, and in this context, local partnerships seem particularly useful.

Self-regulation and reflexivity are some of the keywords that must be applied, and locally adapted and adaptable methods are needed. While international standards are, of course, widely recognised, they are not widely enough used and in place. The largest part of firms work outside international value-chains, have limited financial and human resources available and need other systems than ISO14001, EMAS, OHSAS18000, etc. However, they do need systematic approaches that are recognised by their local stakeholders (employees, local costumers and consumers, local authorities, etc.), and that are easily integrated into their day-to-day management. Partnerships and networks in this context is therefore more than a way to access resources that you are not in possession of yourself. It is also about ways of finding common ground for and action towards building sustainable institutions (social capital) for social (human & intellectual), economic and environmental sustainability.

The P3 model has many variants. Green Network turned to networking and a partnership model as a means to step up the ‘sustainability staircase’, cf. Lehmann (2006:242). In many ways this has proven to be a success. First of all, by providing a context where ascension is possible, second by providing a context where ascension is rewarded, and third by developing innovative and appropriate means to relatively quickly ascend from one step to the next, regardless of which step you are currently on. However, metaphorically speaking, when climbing a staircase, one may at times stumble and even fall down. In such instances, it is reassuring to know that there is help to get back up, that the fall may not be that big and that you are not punished for being clumsy. Rather, you can trust that someone, who can relate to you and **your** context, is available to help you back on your feet again and gently push you up the next step. And this is perhaps the biggest reason for success in Green Network. A sense of stability created by a common, mutually developed and long term platform, the ‘statements’, and having activities and

outcomes be guided by this. In the sense of the P3 models of collaborative projects, learning systems and governance networks (cf. Figure 13) – or a combination of these – Green Network turned things around. They were able to establish the statement approach as a type of governance network, and thus the foundation for the partnership. All other activities should support this, not just lead to it years from now, i.e. learning systems and collaborative projects were timely and there for a reason, namely members' needs and demands, and outcomes and experiences from these would always have a place to be absorbed instead of floating freely or giving a sense of indifference. Thus, when committing resources it gives meaning to do so, both from a private sector and from a public sector perspective, because successful *“... partnerships seek to create a mechanism through which to achieve beneficial outcomes in a more effective and efficient way than through the participants acting alone.”* (Nelson & Zadek, 2000:23).

In conclusion, Green Network has developed a model and an organisational setup that constitute a creative forum, which has provided new rules and norms that first of all provide more incentives, and second involve a broad set of actors. These actors work to identify problems and develop practical and pertinent solutions in a more participatory, pro-active, effective and efficient way than if each stakeholder should work by itself. That way, the network is not just focusing on sustainability related problems but actually also able to provide means to overcome these problems in a coordinated way; i.e. governance for sustainability.

In the CPIE case, focus was not on governance per se. Instead, it was about the concept of cleaner production. The question is, whether or not – with point of departure in the understanding of governance as “a mode of social co-ordination or a negotiation method to solve contentious problems among political and non-political actors” – the concept of CP and the construct of the CPIE project could have led to a new governance structure: Environmental degradation being the problem, the various CPIE members being the actors jointly trying to produce solutions, a ‘club-model’ being the organisational form, and with activities ranging from formal education over seminars to shop-floor walks. This question is taken up later (Perspectives, pp. 64).

In sum, the research shows that networks and partnerships are able to function as innovative governance structures for sustainable development:

1. By bringing together stakeholders and create interaction

Innovation is an interactionist approach intended to introduce new and useful ideas, services or practices in a given setting. The main driver for innovation is often courage and energy to better the world. Only in a combined effort are stakeholders able to identify

a broader set of sustainability related problems, and in a networked approach create proper, innovative and co-ordinated responses.

2. By formalising a type of voluntary, but binding, agreement

Without formalisation, the legality of the governance structure that the network supposedly represents can be disputed. Formalisation thus represents accountability, while maintaining voluntarism leaves manoeuvrability and freedom to network partners.

Building on this as well as trust, mutuality and longer term thinking, a focus on increased accountability towards stakeholders (and their recognition of such) lead to institutions that predominantly were bound in mindsets – in the cultural/cognitive pillar – become more formal. A mix between normative and regulative has been the case in the Green Network. Referring back to Table 5 this leads to ‘typifications’ becoming ‘values’ and ‘expectations’; ‘identities’ becoming ‘regimes’ and ‘governance systems’; ‘recipes’ and ‘scripts’ becoming ‘standards’ and ‘procedures’ and reflecting on ‘jobs’ and ‘roles’ (both those of government officials and of private sector employees); and finally that the symbolic value of an object (e.g. an environmental statement) in addition will meet standards and comply with legal (or the voluntary) requirements.

3. By going beyond legal requirements

Institutionalising a culture of continual improvements and ‘beyond legal requirements’ means continually raising the bar of what is deemed acceptable behaviour. This ‘acceptable behaviour’ is laid down in the formalisation (see point #1 above), e.g. through the network’s vision and mission statement and enacted through a number of activities undertaken, requiring members to in fact agree more or less on a common path. This path may or may not be easy to agree upon, but either way it will require co-ordination, negotiation and a common understanding of what constitutes present (and perhaps also future) contentious problems.

4. By aiding the private sector in living up to increasing stakeholder demands of transparency, CSR, etc.

Through negotiation and co-ordination, the network is able to provide common ‘direction’, and legitimacy, as well as keep checks & balances. It is also able to initiate development of appropriate and accepted methods, tools, etc that are directly applicable to the private sector’s needs. This creates opportunities for the private sector to participate in co-ordinated efforts rather than having to address and live up to a myriad of demands that change often and are conflicting in nature.

5. By requiring broader coordination across local government boundaries and providing opportunities for same.

Broad involvement in multi-sector networks and public-private partnerships will result in a multitude of problems, broader experience base and different levels of placement on the sustainability staircase. Just as the private sector will involve a broader set of actors, find more incentives and realise that a multitude of solutions exist (cf. Figure 2), so will the public sector. And the network will thus require co-ordination both within (e.g. between the social affairs and the environmental management divisions) and between local governments (e.g. between two municipalities). This is partly arising through the negotiation with the private sector partners on what problems are in fact pertinent and constitutive for action and partly from the political will to participate (see point #1, page 56).

Networks contributions to conceptual developments and capacity building

Roome states that actors in networked relationships “(...) *can spontaneously generate further technological and social innovations.*” (Roome, 2001: 70). Inherent in this is that relationships and interactions matter. The relationships may be seen as carriers of knowledge, and interaction as processes, where new knowledge is produced and learned. This assumption reflects the fact that no-one innovates on their own, and that the most basic characteristic of the innovation system approach is that it is “interactionist” (Johnson & Lehmann, 2006). This also makes it “systemic”.

The point of departure here is that conceptual developments are understood as a process of forming new ideas, choosing and documenting these and bringing about new approaches to achieve pre-determined objectives; and that networks can be seen as systems of innovation.

When trying to characterise a system of innovation one crucial thing, thus, is to characterise the interactions within it. This can obviously be done in many ways, but it is clear that the amount of interaction, the intensity of interaction and the quality of interaction all affect the outcomes of interaction in terms of innovation. The “quality of interaction” is a somewhat vague term, which draws attention to the fact that not all interactions are equally useful from a learning and innovation point of view. The crucial point is that interactions between people and organisations must have the potential to combine different kinds of knowledge, insights and competences in new ways in order to support innovation. It is, of course, also quite possible to go on interacting in the same way year after year without anything new happening at all (Barantes, 2002).

This suggests that networks must either have some kind of deliberate intention to innovate, develop new concepts, break down old institutions and create new ones,

etc.; or that their institutional setting allows for this and even pushes the network in that direction. Further, the institutional approach recognises that the history and context make a difference when it comes to how agents interact and learn.¹⁶

In the two cases of Green Network and CPIE, interaction took place in quite different ways and under different circumstances. This resulted in Green Network being able – and wanting – to **both** contribute to conceptual developments (manuals, tools, methodologies, etc.) **and** to capacity building (knowledge creation and learning through education, seminars, workshops and other information dissemination activities), while the CPIE network was mainly locked into the concept of cleaner production (CP) and focused mainly on the capacity building aspect (which included formal education such as master degrees).

For CPIE, this in fact resulted in few if any conceptual developments be that in organisational, methodological or technological terms. The old adage of teaching a man to fish (rather than just giving him the fish) was followed, however, the man did not – nor was given the choice to – really participate in developing fishing techniques. This was instead the task of a select (elite?) few, operating at the national rather than the local or provincial level. The result was ‘replication’ rather than conceptual developments, i.e. more of the same but with other stakeholders and in other geographical settings. The sustainability of these initiatives has proven to be limited in all cases.

The similarities in the networks activities relate mostly to the interactions created through and by information dissemination and communication as well as knowledge building and learning. While both networks used workshops, seminars and other short-term, one-off activities for informal learning, they differed in their approach to more formal learning and capacity building activities. Green Network focused on shorter term continued education of the so-called Environmental and Social Process Consultants (and the subsequent hiring of these) to directly and more immediately internalise knowledge in the organisations participating – an ‘implant’-technique. CPIE, on the other hand, focused on longer term education (in the form of master’s courses and programmes for public authorities involved in the project) and master’s students’ internships, and thus a more indirect approach that is somewhat similar to a trickle-down and replication technique.

¹⁶ Concepts such as institutions and routines are useful in a theoretical context but they are difficult to handle in empirical and historical studies. It is easier to track the history of for example universities and professional training of engineers than it is to capture changes in how people interact and communicate. But in spite of this difficulty, an understanding of innovation processes is not possible without at least some grasping of how institutions shape interactive learning.

This has meant that the two networks contributed in quite different ways to enlarging problem understanding, possible solutions, engaging stakeholders and providing new and important methodologies. However, the failure of the CPIE network should most probably not be attributed to an imperfect approach but rather to a somewhat short period the network was active coupled with an abrupt closure. From observations of the network and through interaction with partners and stakeholders, it has been evident that CPIE held a lot of promise, not least because it had been able to engage higher educational institutions (e.g. local and regional universities). The capacity building was thus not only aimed at members of the partnership, as the case was in Green Network.

In conclusion, interaction alone does not bring about conceptual developments and societal learning (i.e. broader capacity building). Only in combination with the choice, the commitment and the willingness to do so, can this take place. Green Network organised this through a governance mechanism (illustrated in Figure 14 below) that at its core revolved around ‘Statements’¹⁷ combined with internal and external interaction through quite a large array of different activities and a focus on co-ordination, strategising and development (Lehmann, 2006). Thus, interaction more than just interaction; it is indispensable and valuable input to activities and in support of the possible innovation processes and conceptual developments occurring in the network.

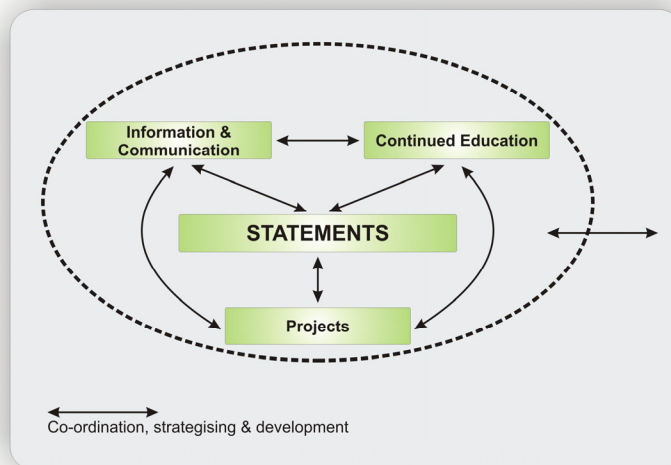


Figure 14 Major activity categories in Green Network and the relation to each other.

¹⁷ The Statements was developed in mutuality by the two main partner-groups in the Green Network (business and local government) as a clear and main mechanism for interaction.

In sum, the research shows that these networks and partnerships contribute to conceptual developments and capacity building:

1. By enabling interaction

Networks are built on a premise of interaction. Open networks for sustainable development thus enable participation and participatory processes, which are fundamental for innovation and learning (capacity building) to occur. Open networks further allow for interaction and articulation of different understandings and argumentations.

2. By creating continual, frequent and meaningful interaction between a diverse set of SD stakeholders

Enabling interaction is one thing, actively encouraging and creating it is another. An organisational field in which a network structure governs and encourages close interaction between different organisations is much more likely to lead to a higher density of information exchanged, creation of common understandings, shared belief systems and a premise for mutuality. In addition, by involving stakeholders, who are not part of the network itself, it is able to capitalise on the strengths of weak ties, i.e. uniqueness and the value of new ideas to innovation. By creating interaction that is continual and frequent, the networks may spark processes of social learning in either formal or informal ways, depending on the network setup and membership-base.

3. By capitalising on interactions in the network

Usefulness of information is linked to the amount of work required to obtain and understand it. Acting as an intermediary and creating scale, the network ensures that every single organisation will not have to go through its own process of identifying, codifying, de-codifying and re-codifying the collective knowledge in the network. This task is instead carried out by the network in order to ensure a codification of the knowledge that meets the objectives of and the shared beliefs in the network so that a larger part of its members can use appropriate knowledge in beneficial and meaningful ways.

4. By disseminating locally adapted and codified knowledge and institutions

Networks are able to minimise the work of their members in relation to obtaining suitable information by actively disseminating knowledge that has been translated and appropriated according to already identified needs and wishes. The usefulness of the information is raised further when the active uptake of it is promoted, is contextualised, and accompanied by reasons for its importance (knowing why).

5. By choice becoming part of the innovation system

Using the interactionist innovation system concept as a tool for development – and not just look at it as a theoretical framework – may provide networks with further opportunities to

*capitalise on their efforts. The choice is thus to become change agents, to create and **be** the space for interaction, and be the place where stakeholders are able to meet in order to deal with conflict stricken areas and sustainability related problems. In this there may lie a yet unrealised potential in universities as (part of) agents of change and in terms of strengthening interaction and translation processes. By forming Public-Private-Academic Partnerships and arenas of shared responsibility, reliance on an often not realised trickle-down effect is being minimised.*

Perspectives for development aid

In the preceding sections, 15 aspects that primarily focus on networks' possibilities and abilities to focus on the human & intellectual potential, the institutional potential and providing linkages between these and the other two (natural and production) potentials for sustainable development have been presented. The context of the networks in this case has been specifically to maximise the ecological as well as the economical potentials of society.

However, when discussing the function of environmental management, cleaner production or sustainable development in a South context, attention is drawn to preconditions that in a North context are often taken for granted: regulatory structures, enforcement practices, management culture, personal commitments and responsibilities, and last but not least the existence of a network of environmental professionals. In Thailand, where the context is a combination of recent and very rapid industrialisation and a young democracy, many of these elements have not undergone that transformation; ecological modernisation has not been institutionalised. In the case of Samut Prakarn (the CPIE case), the new concept of having to pay for wastewater treatment can be viewed as a new institution brought into play mainly by foreign intervention programmes and negotiations at governmental level; Western countries were used as referential contexts, contributing and demonstrating organisation models. The diffusion and imposition of this new institution was then sought through the institutionalisation of a concept (Cleaner Production) that has been around for long, but never really succeeded in the Thai case.

In this process, the CPIE network engaged more than 25 different stakeholder groups, including international aid organisation, NGOs, business support organisations, and educational institutions to name a few. This is where the CPIE project succeeded; bringing a number of actors together. However, the process of interpretation, creation and diffusion of institutions did not take place in any substantial way. Furthermore, when the CPIE project shut down, the continuation of the network was left to waste minimisation clubs (WMC) that were uncertain of

their roles, had difficulties in filling the gap that the CPIE project left by its sudden closure, and were constrained financial-wise. In addition, the WMC as an institution was perhaps not appropriate when the need seemed much more for a strong carrier that could provide the correct mix of top-down and bottom-up processes, a strong carrier able to develop and maintain a mechanism for collaboration, as well as the correct and rather large mix of stakeholders that seemingly worked well in the CPIE case. This is illustrated in Figure 15, integrating the two concepts of stakeholder-spheres and institutional creation and diffusion with industry and the production capital at the centre. Perhaps there are more than just the three spheres illustrated (outset is in Figure 12, p.40); other spheres could be a cultural & social sphere or a labour market sphere.

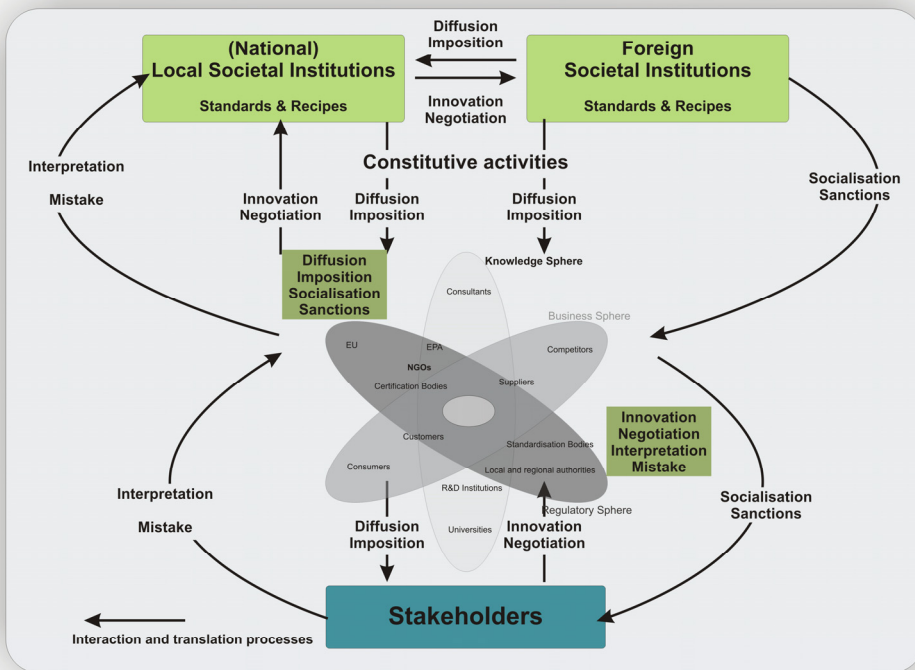


Figure 15 Suggested framework for institutional creation and diffusion through foreign intervention programmes focusing on private sector development mainly.

It must be said, however, that not all interaction and translation processes (the arrows in Figure 15) were in fact present during the CPIE project. Most interaction occurred between singular actors at the network level, however, as concluded earlier, only rarely with any substantial impacts in the sense of

conceptual developments within the network or at the stakeholder level or national level. Establishing these interactions and impacts are key to the sustainability of the network. Scienstock (2005) suggests a more prominent role for regional governments. In this PhD project, respondents in interviews and to questionnaires were of the impression that time, trust between actors, and degree of formalisation were the three most critical factors in this regard. During concrete activities in especially Thailand and South Africa, people have often pointed to universities as key in creating trustworthy and lasting connections between various stakeholders. This also suggests a more prominent role for academia, one that goes beyond involvement in projects and learning systems only and reaches into governance; cf. Figure 13, p. 48.

Development Aid & Public-Private-Academic Partnerships for Sustainable Development

Universities educate decision-makers in both public and private sectors. Those of today as well as those of tomorrow! To do this they are dependent on good connections with industry and government in order to receive participants for their continued education programmes, as well as a bottom up supply of students to their degree and graduate programmes, i.e. the national primary and secondary education systems must be maintained and tuned accordingly. It is also necessary for universities to have well developed contacts to business and other groups in society in order to be able to identify needs for capacity building in terms of the competencies and numbers of graduates needed to fill present and future positions. These contacts provide insights as to whether university research is providing relevant foundations for their educational programmes and relevant research results for society at large. In developing these contacts, universities are obviously no longer “Ivory Tower” institutions. Instead, they are indispensable partners in what could be identified as a bottom-up and demand-driven development process.

Yet, universities must also be independent institutions in terms of defining areas of research that they consider important for the sake of seeking new knowledge and understanding, even in the absence of any immediate applicability or demand from government, business or civil society. This freedom of choice is important in a long term perspective because of the inherent uncertainty associated with scientific research: we can not know for sure if what we know today will also be valuable tomorrow.

Against this background, it puzzles me that universities are seldom found as partners in public-private partnerships, not least those with international donor support.

Local interaction between universities and external partners, e.g. consultants, industry, government and NGO, is of key importance in both education and research. It is a prerequisite for introduction and use of a problem-oriented approach to learning that allow students to develop academically while simultaneously providing them with competencies needed for their career development. In very practical terms consultants, government, industry and universities may accomplish advanced student studies and target-oriented research within joint, real-life projects. Added value is often obtained when various donor supported projects are linked and economic and human resources thereby optimised. Moreover, local PhD programmes can be important cornerstones in the development towards the knowledge based, innovative and auto-learning society. The education of researchers is a necessary first step and a prerequisite for later availability of local talent needed to embed results of aid programmes. This fact should be observed when establishing new donor financed research programmes, i.e. emphasis should be on the local education of researchers, possibly through joint ventures with foreign universities but in accordance with local needs and conditions rather than the traditions or skills prevalent in the donor country.

Against this background Figure 16 proposes a new and more conscious use of universities as development hubs by establishing the interactive field (shown by the broken-line ellipse) of innovation and linking practice and theory. The public-private-academic partnerships proposed earlier are placed inside this field of interaction to suggest that they could and should play key roles in the innovative and auto-learning society.

Positioning a university consortium (rather than the private sector, as was the case in Figure 15) in the centre of the auto-learning society and with the responsibility to be hub in development processes may seem a bit pretentious. However, no other institution has the potential to fill this role equally well if:

- Universities have established links to other universities and research institutions, at home and abroad. This provides valuable input to the national innovation process, in particular where the interaction with practice is intentionally organised. A prerequisite is that the university is up to date with regard to democratic and good governance, high-quality research, and new learning principles and technologies for information

exchange and communication, i.e. all the prerequisites for good tertiary education and mid-career professional training.

- Universities offer the academic space necessary to critically assess research results and address overarching issues such as democracy, social responsibility and corruption, regardless of religious, political or national backgrounds. Few if any other institutions are able to offer similar conditions for free and unbiased discussion of development and progress.
- Universities can establish bonds and partnerships across technological, commercial, cultural, religious and political borders to the benefit of students, faculty and society. Taking the role as development hub is possibly a challenge that universities should face more willingly and consciously than in the past, suggesting that outreach (the third mission of universities) is as important a task of universities as research (first mission) and education (second mission).

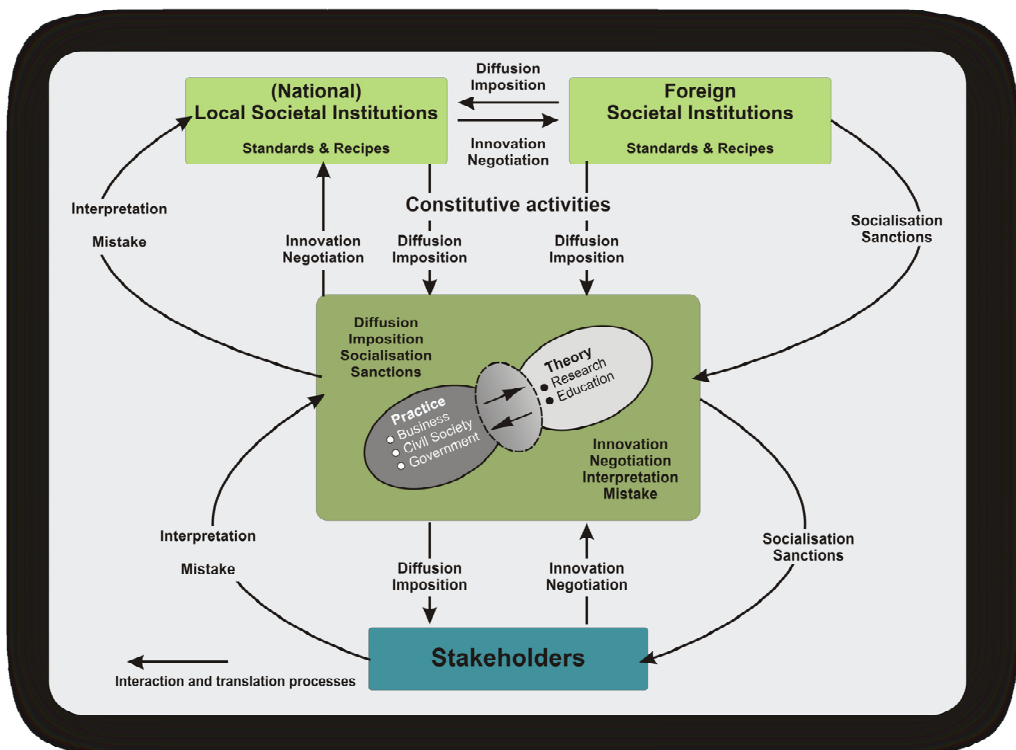


Figure 16 Public-Private-Academic Partnerships at the centre of an innovative and auto-learning society.

Figure 16 may challenge habits and existing paradigms and devise new paths for development. A development, where universities, university education & research and – especially – university outreach play a more prominent role than today.

In Figure 16 a donor-recipient relation may be included, for example during a period of international aid to initiate capacity-building in education and research or as part of other sector-specific programmes or projects in a region or country. However, the model for sustainable development based on the auto-learning society and with the partnership (the PPAP) placed in the centre is not tied to international aid programmes. Actually, the model will continue after cessation of the aid programme, simply because it is valid for any knowledge-based and auto-learning society. The embedding of the aid programme and its continued local ownership is thereby secured in an efficient and lasting mode of operation. The premise is, of course, that interaction and translation processes are allowed to occur and that the partners in mutuality have developed a mechanism for collaboration. In Green Network, that mechanism was ‘statements’, however as the cases developed through the studies of university hubs (Hansen et al., 2005; Hansen & Lehmann, 2006) and the UniverCity (Lehmann & Fryd, 2008) show, the mechanism may just as well be learning and capacity building (Problem-Oriented and Project-Based Learning in those cases).

Experiences from both these cases show that meaningful interaction is key and thus supports the lessons learned from the two partnership cases of Green Network and CPIE. Furthermore, over time the Alumni and the partners can start a self-perpetuating process that strengthens the networks between professions, cities, universities, etc. nationally as well as internationally, enhancing negotiation, interpretation, socialisation and general confidence in knowledge sharing and building.

It must be kept in mind, though, that institutionalisation processes are never short-term. The processes of ecological modernisation in Europe have lasted for at least two decades and been subject to very little outside ‘interference’. What we experience in the Southern context are processes that mainly last for short periods of time, with extreme intervention, and little time to internalise or institutionalise the substantial amount of ideas and recipes brought into play, most often by foreign experts and ‘their’ artefacts (e.g. CP, ISO14000-series, etc.) as carriers. However, these carriers have most often not let their recipes be open for translation and appropriation, and the artefacts have perhaps processed little symbolic value in the Southern contexts. Furthermore the institutionalisation processes have predominantly been top-down rather than the mix that in such instances may be much more appropriate.

This calls for much longer-term thinking and better co-ordination between donors in order for a real and beneficial strengthening of each of the four potentials for sustainable development to occur. The importance laid upon immediate outcomes (e.g. as number of companies having participated in training sessions) should be lessened and, more importantly, combined with a focus on who is still doing something five to ten to fifteen years down the road. It also calls for donors to look to particular useful concepts that work and are of use in the donor countries and seek their translation, appropriation and uptake rather than just their replication in recipient countries. For this to occur, it may not be the potentials themselves that should be in focus but rather the linkages between them. These linkages, I will suggest, are **Democracy & Civility, Equity, Sufficiency, Efficiency, Integrity, and Precaution**.

A new framework for societal potential for sustainable development is presented in Figure 17.

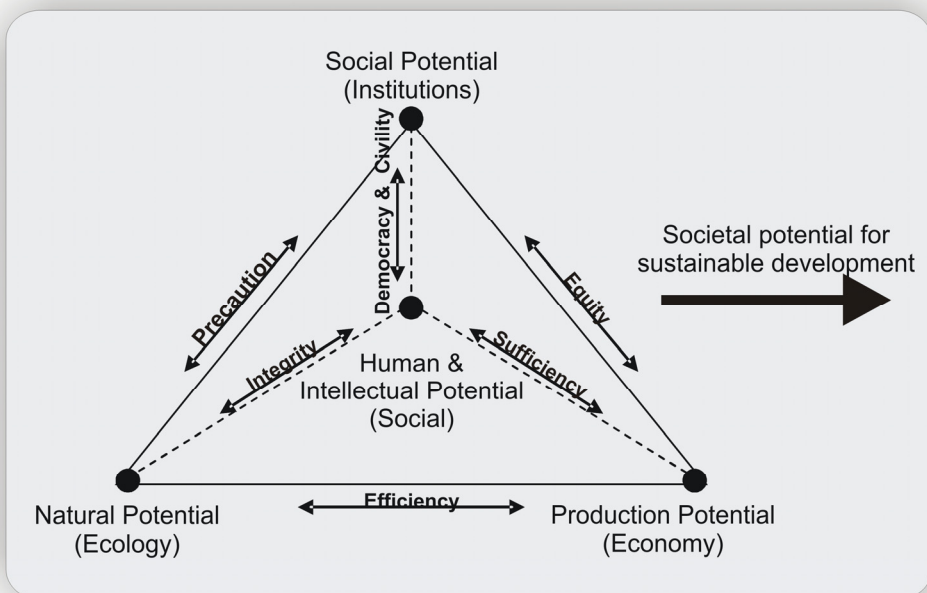


Figure 17 Societal potential for sustainable development Six linkages and four potentials.

“Public-Private-Academic Partnerships” is a concept that so far has been put to limited use. However, given an interest in national innovation systems and acknowledging universities potential to improve economic well-being and livelihood of societies, there is reason to further study the existing experiences and

consider the wider applications of this concept. Focus should be on transition and developing economies and their sustainable economic, ecological, human & intellectual and institutional development. Focus could be on theories linked to organisational learning, innovation, resource based view of the firm, and dynamic capabilities. This would give further insights into something this PhD project has not really focused on, namely the micro-level and thereby be able to provide further insights into why the Green Network way of ‘doing things’ is as successful as it seemingly is.

References

- Aalborg University [AAU] (2001), *Development and Research: New Opportunities and Threats*, Aalborg: Aalborg University.
- Aalborg University [AAU] (2002), *Development Research & Education: AAU Strategic Perspectives*, Aalborg: Aalborg University.
- Agapitova, N. (2005), 'The Role of Social Networks for National Innovation Systems' Dynamics', Washington D.C.: World Bank. (downloadable from: http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1099079975330/Agapitova_paper.pdf)
- Alkhfaji, Abbass F. (1989), *A Stakeholder Approach to Corporate Governance: Managing in a Dynamic Environment*, Westport, CT: Quorum Books.
- Barnard, Chester L. (1938), *The Functions of the Executive*. Cambridge: Harvard University Press.
- Barantes, Jeffrey O. (2002), *Innovation and Performance Improvements in the Cooperative Sector, Costa Rica*, PhD Thesis, Aalborg University, Denmark.
- Bazzoli, G.J.; Stein, R.; Alexander, J.A.; Conrad, D.A.; Sofaer, S. & Shortell, S.M. (1997), 'Public-Private Collaboration in Health and Human Service Delivery: Evidence from Community Partnerships', *The Millbank Quarterly* **75** (4): 533-61.
- Beck, Ulrik (1986; 1992), *Risk Society: Toward a New Modernity*, London: Sage.
- Boons, F. & Berends, M. (2001), 'Stretching the Boundary: The Possibilities of Flexibility as an Organizational Capability in Industrial Ecology', *Business Strategy and the Environment* **10** (2): 115-24.
- Borrás, S. (2007), 'The European Commission as a Network Broker', *European Integration online Papers* **11**, 1.
- Bowie, N (1988), 'The Moral Obligations of Multinational corporations', in Steven Luper-Foy (ed.) *Problems of International Justice*, Boulder, CO: Westview Press: 97-113.
- Buse, K. & Walt, G. (2000), 'Global public-private partnerships: part 1 – a new development in health?', *Bulleting of the World Health Organisation* **78** (4): 549-61.
- Bäckstrand, K (2006), 'Multi-Stakeholder Partnerships for Sustainable Development: Rethinking Legitimacy, Accountability and Effectiveness', *European Environment* **16** (5): 290-306.

- CASA (2001), *Regionale Miljønetværk og Grønne Job*, Copenhagen: Den Grønne Jobpulje, Miljøstyrelsen, Miljø- og Energiministeriet.
- Christoff, (1996), 'Ecological Modernisation, Ecological Modernities', *Environmental Politics* 5 (3): 476-500.
- Clarkson, M. (1995), 'A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance', *Academy of Management Review* 20 (1): 92-117.
- Cohen, M. (1997), 'Risk Society and Ecological Modernisation: Alternative Visions of Post-Industrial Nations', *Futures* 29 (2): 105-19.
- Cohen, W.M. & Levinthal, D.A. (1990), 'Absorptive Capacity: A New Perspective on Learning and Innovation', *Administrative Science Quarterly* 35 (1): 128-52.
- Costanza, Robert; John Cumberland; Herman E. Daly; Robert Goodland & Richard Norgaards (1997), *An Introduction to Ecological Economics*, Boca Raton: CRC Press LLC
- Crossan, M.M.; Lane, H.W. & White, R.E. (1999), 'An Organizational Learning Framework: From Intuition to Institution', *Academy of Management Review* 24 (3): 522-37.
- Daly, Herman E. (1996), *Beyond Growth: The Economics of Sustainable Development*, Boston: Beacon Press.
- DANIDA/DANCED (2001), *Miljøbistand til udviklingslande: Årsberetning 2000 under Miljø-, Freds- og Stabilitetsrammen (MIFRESTA)*, Copenhagen, Ministry of Foreign Affairs/Ministry of Environment and Energy.
- Danish Ministry of Foreign Affairs [MFA] (1994), *A Developing World: Strategy for Danish Development Policy towards the Year 2000*, Copenhagen: Ministry of Foreign Affairs.
- Danish Ministry of Foreign Affairs [MFA] (2000), *Denmark's Development Policy: Strategy*, Copenhagen: Ministry of Foreign Affairs.
- Danish Ministry of Foreign Affairs [MFA] (2001), *Partnerships at the Leading Edge: A Danish Vision for Knowledge, Research and Development (with appendices)*, Copenhagen: Ministry of Foreign Affairs.
- Danish Ministry of Environment and Energy [MEE] (2001), *Thai-Danish Country Programme for Co-operation in Environment and Sustainable Development (2002-2006)*, Copenhagen: DANCED/DTEC.

- Danish Ministry of Foreign Affairs [MFA] (2002), *Final Review Report: Programme Review for Thai-Danish Cooperation in Environment and Development 2002-2006*, Copenhagen: DANIDA-TSA.
- DeSimeone, Livio D. & Frank. Popoff (1997), *Eco-Efficiency: the Business Link to Sustainable Development*, Cambridge: MIT Press.
- DiMaggio, P.J. & Powell, W.W. (1983) 'The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields', *American Sociological Review* **48** (2): 147-60.
- Donaldson, T. & Preston, L.E. (1995), 'The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications', *Academy of Management Review* **20** (1): 65-91.
- Dyer, J. & Nobeoka K. (2000), 'Creating and managing a high-performance knowledge-sharing network: the Toyota case', *Strategic Management Journal* **21** (3): 345-67.
- Dyllick, T. & Hockerts, K. (2002), Beyond the Business Case for Corporate Sustainability, *Business Strategy and the Environment* **11** (2): 130-41
- Eberstadt, N. (1973), 'What history tells us about corporate responsibility', *Business and Society Review* **7**: 76-81.
- Edquist, C. & B. Johnson (1997), 'Institutions and Organisations in Systems of Innovation', in Charles Edquist (ed.) *Systems of Innovation: Technologies, Institutions and Organizations*, London and Washington: Pinter/Cassell Academic:
- Elkington, John (1997), *Cannibals with Forks: the Triple Bottom Line of 21st Century Business*, Oxford: Capstone.
- Farrell, K.T.; Kemp, R.; Hinterberger, F.; Rammel, C. & Ziegler, R. (2005), 'From *for* to governance for sustainable development in Europe: what is at stake for further research', *Int. J. Sustainable Development* **8** (1/2): 127-50.
- Fincham, R. & Korrûbel, J. (2003), 'Promoting Sustainable Urban Livelihoods And Environments: The Role Of Government, Business And The Public', *Proceedings, Environmental Management & Technology: A Clean Environment Towards Sustainable Development*, 4-6 August 2003, Putrajaya: LUCED-I&UA.
- Fincham, R., S. Georg & E.H. Nielsen (2005), 'Universities and the dilemmas of sustainable development', in Robert Fincham, Susse Georg & Eskild Holm Nielsen (eds.), *Sustainable Development and the University: New strategies for research, teaching and practice*, Howick: Brevitas: 13-33.

Freeman, Edward R. (1984), *Strategic Management: A Stakeholder Approach*, New York: Pitman Books Ltd.

Frooman, J. (1999), 'Stakeholder Influence Strategies', *Academy of Management Review* **24** (2): 191-205.

Gaardhøje, J.J., Hansen, J.Aa. & Thulstrup, E.W. (eds.) (2006), *Capacity Building in Higher Education and Research on a Global Scale*, Copenhagen: The Danish National Commission for UNESCO.

Galaskiewicz, J. and A. Zaheer (1999). 'Networks of Competitive Advantage', in Steven B. Andrews and David Knoke (eds.), *Research in the Sociology of Organizations: Networks in and around Organizations*, Stamford: JAI Press: 237-61.

Gibbs, D. (2000), 'Ecological modernisation, regional economic development and regional development agencies', *Geoforum* **31** (1): 9-19.

Gladwin, T.N. (1993), 'The Meaning of Greening: A Plea for Organizational Theory', in Kurt Fischer and Johan Schot (eds.), *Environmental Strategies for Industry*, Washington, DC: Island Press: 37-62.

Gladwin, T.N.; Kennelly, J.J. & Krause, T.-S. (1995), 'Shifting Paradigms for Sustainable Development: Implications for Management Theory and Research', *The Academy of Management Review* **20** (4): 874-907.

Glaeser, E.L. (2000), 'The Future of Urban Research: Non-Market Interactions', in William G. Gale & Janet Rothenburg Pack (eds.), *Brookings-Wharton Papers on Urban Affairs*, The Brookings Institution: 101-49.

Glaeser, E.L. & Scheinkman, J.A. (2001), 'Non-Market Interaction', *NBER Working Paper Series* (8053), Cambridge: National Bureau of Economic Research.

Glasbergen, P. (1998), 'Modern Environmental Agreements: A Policy Instrument Becomes a Management Strategy', *Journal of Environmental Planning and Management* **41** (6): 693-709.

Glasbergen, P. (1999), 'Tailor-made environmental governance: on the relevance of the covenanting process', *European Environment* **9** (2): 49-58

Gould, R. & Fernandez R. (1989), 'Structures of Mediation: A Formal Approach to Brokerage in Transaction Networks', *Sociological Methodology* **19** (1): 89-126.

Grabher, Gernot (1993), *The Embedded Firm: the Socioeconomics of Industrial Networks*, London: Routledge.

Granovetter, M.S. (1985), 'Economic Action and Social Structure: The Problem of Embeddedness', *The American Journal of Sociology* **91** (3): 481-510.

- Granovetter, M.S. (1973), 'The Strength of Weak Ties', *The American Journal of Sociology* **78** (6): 1360-80.
- Gulati, R. & Gargiulo, M. (1999), 'Where do Interorganizational Networks Come From?', *The American Journal of Sociology* **104** (5): 1439-93.
- Gunningham, N. & D. Sinclair (2002), 'Conclusion: Reconfiguring environmental regulation', in Neil Gunningham & Darren Sinclair (eds.) *Leaders & Laggards: Next-Generation Environmental Regulation*, Sheffield, UK: Greenleaf Publishing: 189-204.
- Hajer, Maarten A. (1995) *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*, Oxford: Clarendon Press.
- Hansen, J.Aa. & Lehmann, M. (2006), 'Agents of Change: Universities as Development Hubs', *Journal of Cleaner Production* **14** (9-11): 820-29.
- Hansen, J.Aa., K. Lindegaard & M. Lehmann (2005), 'Universities as development hubs', in Robert Fincham, Susse Georg & Eskild Holm Nielsen (eds.), *Sustainable Development and the University: New strategies for research, teaching and practice*, Howick: Brevitas: 92-122
- Håkansson, Håkan (1989), *Corporate Technological Behavior: Co-operation and Networks*, London: Routledge.
- Håkansson, Håkan. & Ivan Snehota (1995), *Developing Relationships in Business Networks*, London: Routledge.
- Håkansson, Håkan & Alexandra Waluszewski (2002), *Managing Technological Development: IKEA, the environment and technology*, London: Routledge.
- Hartman, C.L., Hofman, P.S. & Stafford, E.R. (1999), 'Partnerships: A Path to Sustainability', *Business Strategy and the Environment* **8** (5): 255-66.
- Hockerts, K. (1996), *The SusTainAbility Radar (STAR*)*, a Step towards Corporate Sustainability Accounting, discussion paper, London: New Economics Foundation.
- Hockerts, K. (1999), 'The sustainability radar – a tool for the innovation of sustainable products and services', *Greener Management International* **25**: 29-49.
- Hoffman, Andrew J. & Marc J. Ventresca (2002), *Organizations, Policy and the Natural Environment. Institutional and Strategic Perspectives*, Stanford: Stanford University Press.
- Hooghiemstra R. (2000), 'Corporate Communication and Impression Management – New Perspectives Why Companies Engage in Corporate Social Reporting', *Journal of Business Ethics* **27** (1): 55-68.

Huber, J. (2000), 'Towards Industrial Ecology: Sustainable Development as a Concept of Ecological Modernization', *Journal of Environmental Policy & Planning* 2 (4): 269-85.

Jamison, Andrew (2001), *The Making of Green Knowledge: Environmental Politics and Cultural Transformation*, Cambridge: Cambridge University Press.

Jamison, A. & M. Muchie (2005), 'Building bridges, making spaces: on the emerging arenas of green knowledge', in Robert Fincham, Susse Georg & Eskild Holm Nielsen (eds.), *Sustainable Development and the University: New strategies for research, teaching and practice*, Howick: Brevitas: 123-36.

Jänicke, M. (2000), *Ecological Modernization: Innovation and Diffusion of Policy and Technology*, FFU-report 00-08, Berlin: Forschungstelle für Umweltpolitik, Freie Universität Berlin.

Jepperson, R.L. (1991), 'Institutions, Institutional Effects and Institutionalization', in Walter W. Powell & Paul J. DiMaggio (eds.) *The New Institutionalism in Organizational Analysis*, Chicago: University of Chicago Press: 143-63.

Jeppesen, Søren (2004), *Environmental Practices and Greening Strategies of Small Manufacturing Enterprises in South Africa. A Critical Realist Approach*, PhD Series 11-2004. Copenhagen: Copenhagen Business School.

Jeppesen, S., E.H. Nielsen & R. Fincham (2005), 'Networking and partnerships at the local level – striving for academic relevance' in Robert Fincham, Susse Georg & Eskild Holm Nielsen (eds.), *Sustainable Development and the University: New strategies for research, teaching and practice*, Howick: Brevitas: 276-90.

Johnson, B. (1992), 'Institutional Learning', in Bengt-Åke Lundvall (ed.), *National Innovation Systems: Towards a Theory of Innovation and Interactive Learning*, London: Pinter Publishers: 23-44.

Johnson, B. & Lehmann, M. (2006), 'Sustainability and Cities as Systems of Innovation', *Druid Working Paper Series* 2006-17: 1-25.

Jones, T.M. & Wicks, A.C. (1999), 'Convergent Stakeholder Theory', *Academy of Management Review* 24 (2): 206-21.

Jones, C.; Hesterly, W.S. & Borgatti, S.P. (1997), 'A General Theory of Network Governance: Exchange Conditions and Social Mechanisms', *Academy of Management Review* 22 (4): 911-45.

Kaosa-ard, Mingsarn & Pornpen Wijukprasert (eds.) (2000), *The State of Environment in Thailand: A Decade of Change*, Bangkok: Thailand Development Research Institute.

- Kassinis, G.I. (2001), 'Location, Networks and Firm Environmental Management Practices', *Journal of Environmental Planning and Management* **44** (6): 815-32.
- Kemp, R.; Parto, S. & Gibson, R.B. (2005), 'Governance for sustainable development: moving from theory to practice', *Int. J. Sustainable Development*, **8** (1/2): 12-30.
- van Kerkhoff, L. & Lebel, L. (2006), 'Linking Knowledge and Action for Sustainable Development', *Annual Review of Environment & Resources* **31**: 445-77.
- Key S. 1999, 'Towards a new theory of the firm: a critique of stakeholder "theory"', *Management Decision* **37**: 317-28.
- King, A. A.; M.J. Lenox & M.L. Barnett (2002), 'Strategic Responses to the Reputation Commons Problem', in Andrew J. Hoffman & Marc J. Ventresca (eds.) *Organizations, Policy and the Natural Environment: Institutional and Strategic Perspectives*, Stanford: Stanford University Press: 393-406.
- Kirschten, U. (2005), 'Sustainable innovation networks: conceptual framework and institutionalisation', *Progress in Industrial Ecology* **2** (1): 132-47.
- Kjærgård, B. & E. Bondesen (1997), 'Bæredygtighedsidealet og nyere reguleringstrategier på miljøområdet', in Kaare Pedersen, Jesper Holm & Bente Kjærgård (eds.) *Miljøregulering – tværfaglige studier*, Frederiksberg: Roskilde Universitetsforlag: 340-61.
- Konrad, A.; Steurer, R.; Langer, M.E. & Martinuzzi, A. (2006), 'Empirical Findings on Business-Society Relations in Europe', *Journal of Business Ethics* **63** (1): 89-105.
- Lehmann, M. (2006), 'Government-Business Relationships Through Partnerships for Sustainable Development: the Green Network in Denmark', *Journal of Environmental Policy & Planning* **8** (3): 235-57.
- Lehmann, M. & Fryd, O. (2008), 'Urban Quality Development & Management: Capacity Development & Continued Education for the Sustainable City', *International Journal of Sustainability in Higher Education* **9** (1): pp.
- Lehmann, M.; P. Christensen & J.M. Larsen (2005), 'Self-regulation and new Institutions: The Case of Green Network in Denmark', in Sanjay Sharma & Alberto Aragon-Correa (eds.) *Environmental Strategy and Competitive Advantage*, Northampton, MA: Edward Elgar Academic Publishing: 286-308.
- von Malmborg, F. (2003), 'Conditions for Regional Public-Private Partnerships for Sustainable Development – Swedish Perspective', *European Environment* **13** (3): 133-49.

von Malmberg, F. (2004), 'Networking for Knowledge Transfer: Towards an Understanding of Local Authority Roles in Regional Industrial Ecosystem Management', *Business Strategy and the Environment* **13** (5): 334-46.

March, J.G. & Olsen, J.P. (1984), 'The New Institutionalism: Organizational Factors in Political Life', *American Political Science Review* **78** (3): 734-49.

Martinot E & McDoom, O. (2000), *Promoting Energy Efficiency and Renewable Energy: GEF Climate Change Projects and Impacts*, Washington, D.C.: Global Environment Facility.

Martinuzzi, A.; Huchler, E. & Obermayr, B. (2000), 'Promoting Partnerships between Small and Medium-Sized Enterprises and Local Authorities', *Greener Management International* **30** (2): 83-96.

Meadowcroft, J. (1997), 'Planning for Sustainable Development: What can be Learned from the Critics?', in Michael Kenny & James Meadowcroft (eds.) *Planning Sustainability*, London and New York, Routledge: 12-38.

Mendel, P.J. (2002), 'International Standardization and Global Governance: The Spread of Quality and Environmental Management Standards', In Andrew J. Hoffmann & Marc J. Ventresca (eds), *Organizations, Policy and the Natural Environment. Institutional and Strategic Perspectives*, Stanford: Stanford University Press: 407-31.

Meyer, J.W. (1994), 'Rationalized Environments', in: Richard Scott & John W. Meyer (eds.) *Institutional Environments and Organizations. Structural Complexity and Individualism*, Thousand Oaks: Sage Publications: 28-54.

Meyer, John W. & Richard Scott (1983), *Organizational Environments. Ritual and Rationality*, Updated edition 1992, Thousand Oaks: Sage Publications.

Milstein, M.B.; S.L. Hart & A.S. York (2002), 'Coercion Breeds Variation: The Differential Impact of Isomorphic Pressures on Environmental Strategies', in Andrew J. Hoffman, & Marc. J. Ventresca (eds) *Organizations, Policy and the Natural Environment: Institutional and Strategic Perspectives*, Stanford: Stanford University Press: 151-72.

Mitchell R.K.; Agle, B.R. & D.J. Wood (1997), 'Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts', *Academy of Management Review* **22** (4): 853-86.

- Mol, A.P.J. & D.A. Sonnenfeld (2000), 'Ecological Modernisation Around the World: An Introduction', in Arthur P.J. Mol & David A. Sonnenfeld (eds) *Ecological Modernisation Around the World: Perspectives and Critical Debates*, London, UK and Portland, US: Frank Cass Publishers: 3-14.
- Mol, A.P.J. & G. Spaargaaren, (2000), 'Ecological Modernisation Theory in Debate: A Review', in Arthur P.J. Mol & David A. Sonnenfeld (eds) *Ecological Modernisation Around the World: Perspectives and Critical Debates*, London, UK and Portland, US: Frank Cass Publishers: 17-49.
- Murphy, David F. & Jem Bendell (1999), '*Partners in Time? Business, NGOs and Sustainable Development*', Geneva: UNRISD.
- Murphy J. & Gouldson, A. (2000), 'Environmental policy and industrial innovation: integrating environment and economy through ecological modernisation', *Geoforum* **31** (1): 33-44.
- Nasi J; Nasi, S.; Phillips, N. & Zyglidopoulos, S. (1997), 'The evolution of corporate social responsiveness', *Business and Society* **36** (3): 296-321.
- Nelson, Jane & Simon Zadek (2000), *Partnership Alchemy: New Social Partnerships in Europe*, Copenhagen: The Copenhagen Centre.
- Neumayer, Eric (2003), *Weak Versus Strong Sustainability: Exploring the Limits of Two Opposing Paradigms*, 2nd revised edn., Cheltenham, UK and Northampton, MA: Edward Elgar.
- North, Douglass C. (1990), *Institutions, Institutional Change, and Economic Performance*, Cambridge: Cambridge University Press.
- OECD (2003), *Development Co-operation Review: Denmark*, Paris: OECD.
- Oliver, C. (1991), 'Strategic Responses to Institutional Processes', *Academy of Management Review* **16** (1): 145-79.
- Pedersen, C. (2000), 'Local Authorities in Dialogue with Small and Medium-Sized Enterprises', in Ruth Hillary (ed.) *Small and Medium-Sized Enterprises and the Environment: Business Imperatives*, Sheffield, UK: Greenleaf Publishing: 203-18.
- Pierre, Jon (ed.) (1998), *Partnerships in Urban Governance: European and American Experiences*, Basingstoke: Palgrave Macmillan.

- Posch, & Steiner (2006), 'Integrating Research and teaching on Innovation for Sustainable Development', *International Journal of Sustainability in Higher Education*, **7** (3): 276-92.
- Powell, Walther W. & Paul J. DiMaggio (eds.) (1991), *The New institutionalism in organizational analysis*, Chicago: University of Chicago Press.
- Powell, W.W. (1990), 'Neither market nor hierarchy: network forms of organization', *Research on Organizational Behavior* **12**: 295-336.
- Rickards, Tudor (1985), *Stimulating Innovation – A Systems Approach*, London: Frances Pinter.
- Roome, N. (2001), 'Editorial: Conceptualizing and Studying the Contribution of Networks in Environmental Management and Sustainable Development', *Business Strategy and the Environment* **10** (2): 69-76.
- Roome, N.J. (1998), 'Conclusion: Implications for Management Practice, Education, and Research', in Nigel J. Roome (ed.), *Sustainability Strategies for Industry: The Future of Corporate Practice*, Covelo, CA, USA: Island Press: 259-76.
- Røvik, K.A. (1996), 'Deinstitutionalization and the Logic of Fashion', in Barbara Czarniawska & Guje Sévon (eds.) *Translating Organizational Change*, Berlin, GER and New York, US: Walther de Gruyter: 139-72.
- Røvik, Kjell A. (1998), *Moderne Organisasjoner: Trender i Organisasjonstenkningen ved Tusenårsskiftet*, Oslo: Fakkbokforlaget.
- Rowley T.J. (1997), 'Moving Beyond Dyadic Ties: A Network Theory of Stakeholder Influences', *Academy of Management Review* **22** (4): 887-910.
- Schienstock, G. (2005), 'Sustainable Development and the Regional Dimension of the Innovation System', in Matthias Weber & Jens Hemmelskamp (eds.) *Towards Environmental Innovation Systems*, Berlin: Springer: 97-114.
- Schneider, A.L. (1999), 'Public-Private Partnerships in the U.S. Prison System', *American Behavioural Scientist* **43** (1): 192-208.
- Scott, Richard (2001), *Institutions and Organizations*, Thousand Oaks: Sage Publications.
- Selznick, P. (1957), *Leadership in Administration*, New York: Harper.
- Selznick, P. (1996), 'Institutionalism "Old" and "New"', *Administrative Science Quarterly* **41** (2):270-77.

- Shaw, D. & Kid, S. (2001), 'Sustainable Development and Environmental Partnership at the Regional Scale: The Case of Sustainability North West', *European Environment* **11** (2): 112-23.
- Sjöberg, U. (1993), 'Institutional Relationships - the Missing Link in the Network Approach to Industrial Markets', Paper presented at the *9th IMP-Conference*, Bath, UK.
- Smith, Adam (1937), *The Wealth of Nations*, New York: Random House.
- Søndergaard, B., O.E. Hansen & S. Kerndrup (1997), 'Renere produktion i et innovationsperspektiv', in Kaare Pedersen, Jesper Holm & Bente Kjærgård (eds.) *Miljøregulering – tværfaglige studier*, Frederiksberg: Roskilde Universitetsforlag: 293-317
- Sorensen, O.J. (1994), 'Government-Business Relations: Towards a Partnership Model', *International Business Economics, Working Paper Series*, No. 9, Aalborg: Aalborg University.
- Spangenberg, J.H. & Bonniot, O. (1998), 'Sustainability Indicators – A Compass on the Road Towards Sustainability', *Wuppertal Papers* 81, Wuppertal: Science Centre North-Rhine Westphalia.
- Spangenberg, J.H. (2002), 'Environmental space and the prism of sustainability: frameworks for indicators measuring sustainable development', *Ecological Indicators* **2** (2): 295-309.
- Spangenberg, J.H. (2005), 'Will the information society be sustainable? Towards criteria and indicators for a sustainable knowledge society', *Int. J. Innovation and Sustainable Development* **1** (1/2): 85-102.
- Steurer, R. (2005), 'Mapping Stakeholder Theory Anew: From the 'Stakeholder Theory of the Firm' to Three Perspectives on Business-Society Relations', *Business Strategy and the Environment* **15** (1): 55-69.
- Steurer, R.; Langer, M.E.; Konrad, A. & Martinuzzi, A. (2005), 'Corporations, Stakeholders and Sustainable Development I: A Theoretical Exploration of Business-Society Relations', *Journal of Business Ethics* **61** (2): 263-81.
- Thrane, Mikkel & Arne Remmen (unpublished). Lecture notes (Environmental Management) Aalborg: Aalborg University.
- United Nations [UN] (1987), *Resolution adopted by the General Assembly: 42/186. Environmental Perspective to the Year 2000 and Beyond*, accessed February 2006: <http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/RES/42/186&Lang=E>.

UN (1992), *Agenda 21*, United Nations Conference on Environment & Development, Rio de Janeiro, Brazil, 3-14 June 1992, New York: United Nations Division for Sustainable Development.

UN (2005), *Resolution adopted by the General Assembly: 60/1. 2005 World Summit Outcome*, accessed February 2006: <http://daccess-ods.un.org/access.nsf/Get?Open&DS=A/RES/60/1&Lang=E>.

UNDP (2004), *What are Public-Private Partnerships?*, accessed August 2004: <http://www.undp.org/ppp/about/what.htm>.

UNDP (1995), *Work Programme on Indicators of Sustainable Development*, New York: United Nations.

UNEP (2002), 'Comments on the proposed outcome documents of Earth Summit 2002', http://www.uneptie.org/outreach/wssd/docs/further_resources/related_initiatives/UNEDforum/partnerships.pdf

USAID (2002), *Working for a Sustainable World*, Washington, DC: USAID.

Uzzi, B. (1997), 'Social structure and competition in inter-firm networks: the paradox of embeddedness', *Administrative Science Quarterly* **42** (1): 35-67.

Van den Bosch, Frans A. J., Raymond van Wijk & Henk W. Volberda (2003), *Absorptive Capacity: Antecedents, Models and Outcomes*, Rotterdam: Erasmus Research Institute of Management.

Voss, J-P. & Kemp, R. (2005), 'Reflexive Governance for Sustainable Development – Incorporating feedback in social problem solving', Paper for *ESEE Conference*, Lisbon, June 14-17 2005.

Wasserman, Stanley & Joseph Galaskiewicz (eds.) (1994), *Advances in Social Network Analysis: Research in the Social and Behavioral Sciences*, Thousand Oaks: Sage Publications.

WCED (1987), *Our Common Future*, Oxford: Oxford University Press.

Weick, K.E. (1982), 'Management of organization change among loosely coupled elements', in Paul S. Goodman (ed.) *Change in Organizations – New Perspectives in Theory, Research and Practice*, San Francisco, Jossey-Bass Publishers: 375-408

Wellmann, Barry & Steven D. Berkowitz (1988), *Social Structures: A Network Approach*, Cambridge: Cambridge University Press.

Wild, A. (2000), 'Planning for Sustainability: Which Interpretation Are We Delivering?', *Planning Theory & Practice* **1** (2): 273-84.

- World Bank (2000), *Greening of Industry. New Roles for Communities, Markets and Governments*, New York: Oxford University Press.
- Zahra, S.A. & George, G. (2002), 'Absorptive Capacity: A Review, Reconceptualization, and Extension', *Academy of Management Review* **27** (2): 185-203.
- Zollo, M. & Winter, S.G. (2002), 'Deliberate Learning and the Evolution of Dynamic Capabilities', *Organization Science* **13** (3): 339-51.

Annex 1 - Abstracts

Corporate Awakening – why (some) corporations embrace public-private partnerships

Predominantly since the 1992 Rio Summit, corporations have been increasingly pursuing partnerships with public institutions including governments, international organizations and NGOs that aim to contribute to sustainable development activities. Partnerships have become more common as corporations react to mounting pressure from corporate stakeholders, civil society and government on the responsible nature of their business practices.

The corporate awakening towards a broader role of business in society and the trend of corporations embracing partnerships has led many to question the driving factors that motivate corporations to pursue partnerships. In this paper, the authors examine the underlying drivers of corporate organizational behaviour from the theoretical perspectives of both legitimacy and stakeholder needs, and discuss the challenges of gaining insight into why corporations embrace public-private partnerships. These theoretical perspectives are used to gain a deeper understanding of the corporate drivers that motivated TOTAL S.A. to approach UNESCO for cooperation on community development programmes in Myanmar.

Universities as Development Hubs

Capacity-building in environment and development has been implemented and tested over the last decade through university and university consortia networking. Universities from Africa (Botswana and South Africa), Asia (Malaysia and Thailand), Central America (Costa Rica, El Salvador and Nicaragua) and Europe (Denmark) have collaborated with graduate students and faculty. Initially some programmes emphasised research and others higher education, but eventually a blend of research and higher education appeared to be more productive. Links to external partners in public and private business have been established and proved successful in terms of mutual benefits.

Activities comprise evolution of new study curricula (including a shift of the learning paradigm to problem-based and project-organised learning), exchange of students and faculty, joint research and joint development conferences. The results have been promising in terms of concrete results within each type of activity and together they provide vital steps in capacity-building in tertiary education to the benefit of development and environment. Some of the results and their implications are presented in this chapter and more are documented by references.

Strengthening of tertiary education is assumed to be a prerequisite for economic and democratic development in all countries, be they industrialised, in transition or developing. However, particularly in transition and developing countries there is a need for special support, e.g. through international aid programmes to tertiary education, including research and innovation in an interplay with other research institutions and business. In the absence of such support the so-called digital divide between industrial and developing and transition countries will widen, and brain-drain and poverty problems will continue to grow.

Universities should play a central role in such global efforts to strengthen tertiary education. Modes of operation are still deficient, but “Universities as Development Hubs” is suggested as a concept to study further and modify to meet particular needs. In co-operation with external partners such as business, consultants, NGOs and civil society at large, the term emphasises universities as key agents and providers in new learning, including developing tools such as project-based and problem-oriented learning (PBL) as well as information and communication technology (ICT); as providers of competent and motivated graduates to fill key positions in society; and as indispensable partners in creating the innovative and auto-learning society necessary to curb poverty and facilitate prosperity.

Self-regulation and new institutions: the case of Green Network in Denmark

Moving from largely command and control measures in the 70s and 80s, through cleaner production and self-regulatory initiatives in the 90s, the emphasis in the new millennium is more on using networks and partnerships as levers for promoting a greening of industry. In terms of public-private partnerships, one of the foremost Danish initiatives is the Green Network, which currently involves more than 200 companies and 10 public bodies. Fundamentally, it aims at providing new forms of cooperation between public authorities and private companies. The vehicle for this was initially an environmental statement. With the passing of time, however, the demands and pressures on both companies and public bodies have increased, and the tools and means employed have developed accordingly.

A constant flow of recipes or standards is the order of the day for modern companies and organisations. What is important for their survival is the ability to cope with this flow, adopting relevant recipes from it and incorporating these into their organisation - and dispensing with them when they become outmoded. This ability is exhibited by what Røvik (1998) calls the “multi-standard organisation”, and he identifies five fundamental capacities that define it.

An evaluation of Green Network reveals that the five capacities outlined in Røvik's theory are all present. Green Network has exhibited a remarkable ability to keep up with trends in the development of the idea of ecological transformation. They have been able to keep pace with all the important developments during the last ten years, absorbing what they find important and discarding aspects that do not fit into their vision and programmes. The resulting manuals, tools and ways of propagating knowledge all reflect the "Green Network way of doing things", i.e. keep it simple, work together and share knowledge.

Government-Business Relationships Through Partnerships for Sustainable Development: the Green Network in Denmark

Moving from largely command and control measures in the 1970s and 1980s, through cleaner production initiatives and self-regulatory initiatives in the 1990s, the emphasis is increasingly on using networks and partnerships between private firms, NGOs, government and civil society as levers for promoting a greening of industry. In terms of public-private partnerships, one of the foremost Danish initiatives is the Green Network in the county of Vejle. This initiative currently involves more than 250 companies and ten public bodies. The network started in 1994 and has grown in size and importance ever since. Fundamentally, it aims at providing new forms of co-operation between public authorities and private companies. The vehicle for this was initially a voluntary environmental statement by companies, who wished to be members. With the passing of time, however, the demands and pressures on both companies and public bodies have increased. Hence, the tools and means employed—outside as well as inside the network—have developed accordingly.

In this paper, a distinct partnership mode of government-business relationships – a collaborative network with respect, trust and mutual legitimacy – is discussed and related to the Green Network way of doing things. The conclusion is that through dialogue, reflexivity and the establishment of an enabling environment, public-private partnerships can become useful vehicles in societies' move towards sustainability.

Public-Private Partnerships: Facilitators of Environmental Improvement?

Public-private partnerships in the environmental field have emerged as one option in the pursuit of sustainable development. So-called 'Green Networks', 'Cleaner

Production Centres', 'Waste Minimisation Clubs' are among others highlighted as alternatives to governmental regulation. While being promoted as an option for governments in the South to make up for lack of sufficient environmental legislation and enforcement, the majority of these examples, however, stem from countries in the North. Uncritical transfer of such concepts to contexts in the South along with substantial, external donor funding have in many cases led to disappointing outcomes. The authors discuss key factors in the institutional set-up and the importance of institutional carriers for the potential success of Green Networks in the South. With reference to ongoing initiatives in Thailand, the authors assess these initiatives in an institutional framework and suggest how the experiences can be understood in their own rights.

Agents of Change – Universities as Development Hubs

Capacity building for sustainable development has been a targeted activity over the last decade through university and university consortia networking. Universities from Africa (Botswana and South Africa), Asia (Malaysia and Thailand), Central America (Costa Rica, El Salvador and Nicaragua) and Europe (Denmark) participated with graduate students and faculty. Initially, some programmes emphasised research and others higher education, but eventually a blend of research and higher education was found to be more productive. Links to external partners in public and private business have been established and have proven to be successful in terms of mutual benefits. Activities comprised joint evolution of new study curricula (including a shift of the learning paradigm to problem-oriented and project-based learning), human resource development, and joint research. The results are promising in terms of concrete results within each type of activity and together they provide vital steps in capacity building in tertiary education to the benefit of development and environment. Universities should play a central role in such global efforts to strengthen tertiary education. Modes of operation are still deficient, but "universities as development hubs" is suggested as a concept to study further and modify to needs. Some of the results and their implications are presented in this paper and more are documented in the references that are cited. In short, universities, in joint action with business and society at large are necessary though not sufficient prerequisites for constructing and maintaining knowledge societies. Such action is equally important in established and developing economies.

Urban Quality Development & Management – Capacity Development & Continued Education for the Sustainable City

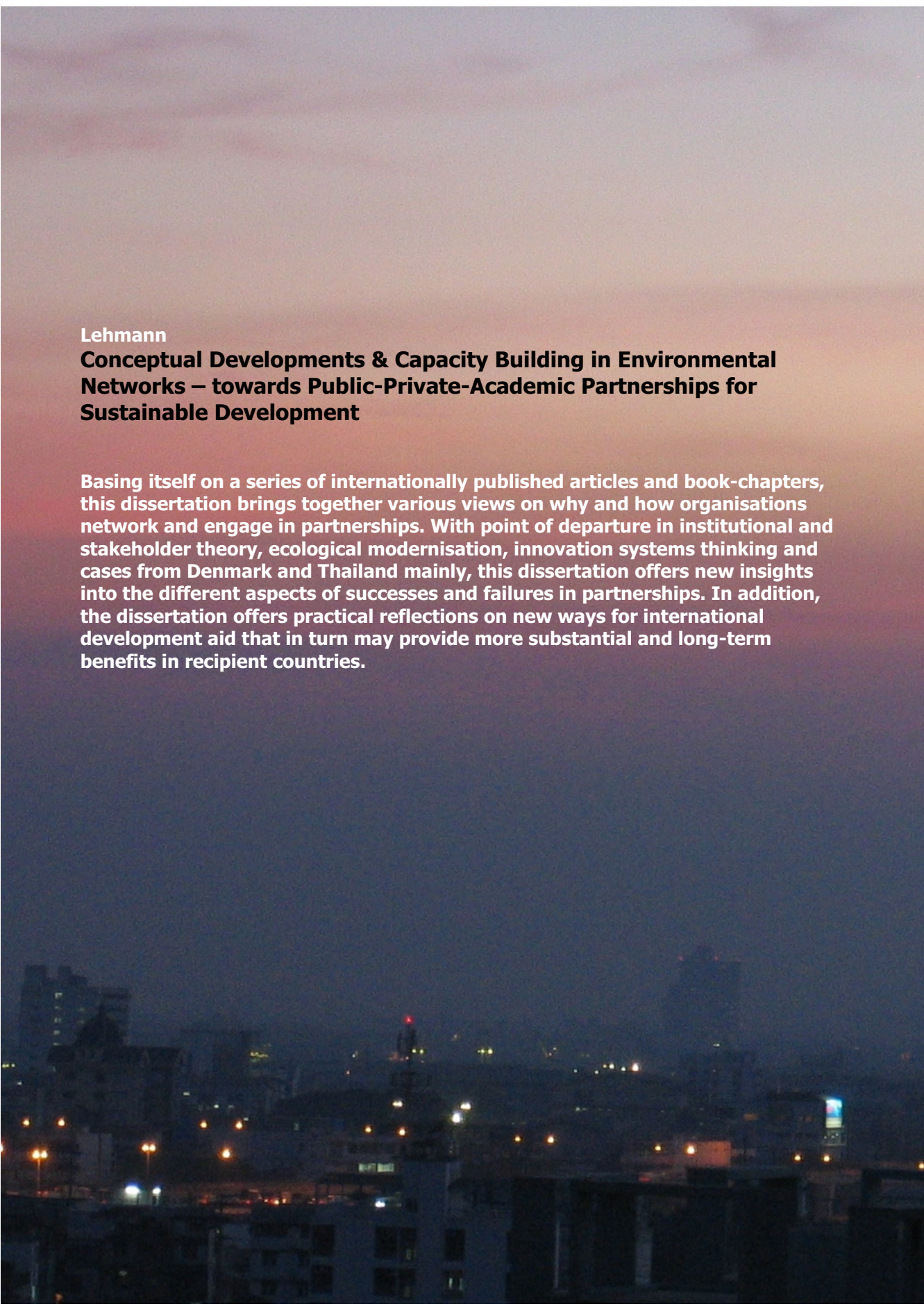
Purpose: The purpose of this article is to describe and discuss the development and the structure of a new international master on the subject of Urban Quality Development & Management, and explore the potential of the process and the outcome in serving as models adoptable by faculty at other universities.

Design/methodology/approach: The study has been carried out as action research. Using innovation and user-producer interaction as the framework, the authors present the development process; the structure, contents and methodology of the programme; and report on their research findings.

Findings: Urban quality development and management is dependent on human resource development, institutionalised networks and confident exchange of knowledge, and must identify and incorporate multiple environmental, social, economic and cultural aspects. The authors find that at the core of innovative societies, an interlinkage exists between practice (business, civil society, governance) and theory (research, education). The case illustrates how a new curriculum takes time to develop and implement and how it relies on confidence and trust between partners, in this case cities and universities, before being able to plant the seed for a sustainable response to the needs of city administrations. University consortia may be particularly useful as providers of a broad framework and an enabling setting in which diffusion of innovation can occur.

Practical implications: The article presents a successful approach to developing new curricula. Basing itself on user-producer interaction within the framework of innovation and innovation theory, the programme addresses urban quality through a multi-disciplinary and inter-institutional collaboration between city administrations and universities. Per se, the approach is easily replicable but will require time, effort and dedication by all involved, both during development and in later execution.

Originality/value: The article reports on a new, unique programme and further places the development of the curriculum and the curriculum itself explicitly in the context of user-producer interaction and with innovation as the framework. While this framework is widely used both descriptively and prescriptively in product development, it has seemingly yet to be applied extensively for other types of developments, including university educations.



Lehmann

Conceptual Developments & Capacity Building in Environmental Networks – towards Public-Private-Academic Partnerships for Sustainable Development

Basing itself on a series of internationally published articles and book-chapters, this dissertation brings together various views on why and how organisations network and engage in partnerships. With point of departure in institutional and stakeholder theory, ecological modernisation, innovation systems thinking and cases from Denmark and Thailand mainly, this dissertation offers new insights into the different aspects of successes and failures in partnerships. In addition, the dissertation offers practical reflections on new ways for international development aid that in turn may provide more substantial and long-term benefits in recipient countries.